CITGO Petroleum Corporation
P.O. Box 4689
Houston, TX 77210-4689

CERFIFIED MAIL RETURN RECEIPT REQUESTED
7011 1570 0003 0458 5728

August 30, 2012

Chief
Environmental Enforcement Section
Environment and Natural Resources Division
U.S. Department of Justice
P.O. Box 7611, Ben Franklin Station
Washington, DC 20044-7611
Reference Case No. 90-5-2-1-07277

Re: Semi-Annual Report
Report Covering Period January 1, 2012 – June 30, 2012
CITGO Petroleum Corporation
Civil Action Number H-04-3883
Southern District of Texas, Consent Decree entered January 26, 2005

Dear Chief:

Pursuant to Section IX of the referenced Consent Decree, CITGO is submitting the Semi-Annual Report for the 1st half of 2012 for the Covered Refineries. The Covered Redineries include the Corpus Christi East Refinery, the Corpus Christi West Refinery, the Lake Charles Refinery, and the Lemont Refinery. The Paulsboro and Savannah Refineries are owned and operated by NuStar Asphalt Refining, LLC. Semi-annual reports for these facilities are submitted by CITGO Petroleum Corporation. This report covers the period from January 1, 2012 through June 30, 2012.

The Semi-Annual Report consists of individual reports for each of the Covered Refineries, and therefore six reports are enclosed. Each individual report consists of a spreadsheet listing each applicable Consent Decree topic, Paragraph reference, due date, submittal or completion date, a description of the requirement, and comments detailing compliance status. The spreadsheet also addresses the requirements of Paragraph 144, Section IX, and includes designation of the applicable section of Paragraph 144 for which the information is being reported. This designation appears in the report spreadsheet column labeled "¶ 144 Reporting (a. – e.)". Attachments are also used to provide additional information.

A complete set of the six reports is being provided to EPA Headquarters. Copies of the appropriate individual refinery reports are being provided to the Applicable EPA Regions and Applicable State Agencies as described in Section XVII and additions requests from EPA and Illinois EPA.

I certify under penalty of law that this information was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my direction and my inquiry of the person(s) who manage the system, or the person(s) directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

If you have any questions, or require additional information, please contact me at 832-486-4903.

Sincerely,

David Hollis

David Hollis
Manager Environmental Services

Enclosures

Copies per Section XVII, Paragraph 270:

Covered Refineries

Certified # 7011 1570 0003 0458 5735
U.S. Environmental Protection Agency
Director, Air Enforcement Division
Office of Civil Enforcement
Ariel Rios Building, Mail Code 2242-A
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460-0001

Manager, Environmental Services
CITGO
1293 Eldridge Parkway
Houston, TX 77077

General Counsel
CITGO
1293 Eldridge Parkway
Houston, TX 77077

Matrix New World Engineering Inc. *(via email only)*

Elizabeth Cannon of EPA *(via email only)*

Lake Charles Refinery

Certified # 7011 1570 0003 0458 5742
Chief
Air, Toxics, and Inspections Coordination Branch
Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

Certified # 7011 1570 0003 0286 5846
Peggy M. Hatch
Administrator, Enforcement Division
Office of Environmental Compliance
Louisiana Department of Environmental Quality
P.O. Box 4312
Baton Rouge, LA 70821-4312

Lemont Refinery

Certified # 7011 1570 0003 0286 5853
Air and Radiation Division
U.S. EPA, Region 5
ATTN: Compliance Tracker
77 West Jackson Blvd. (AE-17J)
Chicago, IL 60602-3018

Certified # 7011 1570 0003 0286 5860
The State of Illinois
Office of the Illinois Attorney General
69 W. Washington St, 18th Floor
Chicago, IL 60602

Certified # 7011 1570 0003 0286 5877
Office of Regional Counsel
U.S. EPA, Region 5
77 West Jackson Blvd. (C-14J)
Chicago, IL 60604

Certified # 7011 1570 0003 0286 5884
Manager
Air Compliance Unit
Compliance and Enforcement Section (MC-40)
Bureau of Air
Illinois Environmental Protection Agency
P.O. Box 19276
Springfield, IL 62794-9276

Certified # 7011 1570 0003 0286 5891
Manager
Permit Section (MC-11)
Division of Air Pollution Control
Illinois Environmental Protection Agency
P.O. Box 19506
Springfield, IL 62794-9506

Certified # 7011 1570 0003 0286 5907
Manager
Air Regional Field Office
Division of Air Pollution Control
Illinois Environmental Protection Agency
9511 West Harrison
Des Plaines, IL 60016

Corpus Christi East Refinery and Corpus Christi West Refinery

Certified # 7011 1570 0003 0286 5914
Chief
Air, Toxics, and Inspections Coordination Branch
Environmental Protection Agency, Region 6
1445 Ross Avenue
Dallas, TX 75202-2733

Savannah Refinery

Certified # 7011 1570 0003 0286 5921
Chief, Air Enforcement & EPCRA Branch
Air, Pesticides and Toxics Management Division
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, S.W.
Atlanta, GA 30303

Certified # 7011 1570 0003 0286 5938
Chief
Air Protection Branch
Environmental Protection Division
4244 International Parkway, Suite 120
Atlanta, GA 30354

Paulsboro Refinery

Certified # 7011 1570 0003 0286 5945
Director, Division of Enforcement and Compliance Assistance
U.S. Environmental Protection Agency, Region 2
21st Floor
290 Broadway
New York, NY 10007

Certified # 7011 1570 0003 0286 5952
Chief, Air Compliance Branch
Division of Enforcement and Compliance Assistance
21st Floor
290 Broadway
New York, NY 10007

Certified # 7011 1570 0003 0286 5969
New Jersey Department of Environmental Protection
Southern Regional Office
Air Compliance & Enforcement Manager
One Port Center
2 Riverside Drive, Suite 201
Camden, NJ 08103

bc:

Lee Liebendorfer – Lake Charles report
Mark Cheesman – Corpus Christi reports
James Tancredi – Lemont report
Janet Ferris – Paulsboro report
Dusty Crisler – Savannah report
Chris Newcomb – Legal
File: Semi-Annual Report, IX, 01-2012

Lake Charles Refinery

CITGO Petroleum Corporation

Semi-Annual Report

January 1, 2012 – June 30, 2012

Reference Case No. 90-5-2-1-07277

Lake Charles Refinery
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Executive Summary

Pursuant to Section IX of the CITGO Petroleum Corporation Consent Decree (Civil Action Number H-04-3883 – Southern District of Texas) entered January 26, 2005, CITGO is submitting the Semi-Annual Report for the 1st half of 2012 for the Lake Charles Refinery in Lake Charles, Louisiana. This report covers the period from January 1, 2012 – June 30, 2012.

The Semi-Annual Report consists of:

- A spreadsheet listing each applicable Consent Decree topic, Paragraph reference, due date, submittal or completion date, a description of the requirement, and comments detailing compliance status. The spreadsheet also addresses the requirements of Paragraph 144, Section IX, for each applicable Consent Decree paragraph and includes designation of the applicable section of Paragraph 144 for which the information is being reported. This designation appears in the report spreadsheet column labeled "¶ 144 Reporting (a. – e.)."

- A set of attachments that are used to provide additional information.

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Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-A	12	Effective December 1, 2005 (New) October 1, 2005 (Old)	December 1, 2005 and Ongoing	For each FCCU, commence operation, calibrate and certify CEMS for: O2, SO2, NOx, CO and Opacity. The CEMS shall be installed, calibrated and certified in accordance with 40 CFR 60.13 and Part 60 Appendices A and F, and the applicable performance specification test of 40 CFR Part 60 Appendix B.	a. & d.	Complied with requirement for O2, SO2, NOx and CO. Opacity cannot be measured when a Wet Gas Scrubber is used. See **Attachment 1** concerning CITGO's AMP request.
FCCU-B	12	Effective April 1, 2006 (New) October 1, 2005 (Old)	April 1, 2006 and Ongoing	For each FCCU, commence operation, calibrate and certify CEMS for: O2, SO2, NOx, CO and Opacity. The CEMS shall be installed, calibrated and certified in accordance with 40 CFR 60.13 and Part 60 Appendices A and F, and the applicable performance specification test of 40 CFR Part 60 Appendix B.	a. & d.	Complied with requirement for O2, SO2, NOx and CO. Opacity cannot be measured when a Wet Gas Scrubber is used. See **Attachment 1** concerning CITGO's AMP request.
FCCU-C	12	Effective February 1, 2006 (New) October 1, 2005 (Old)	February 1, 2006 and Ongoing	For each FCCU, commence operation, calibrate and certify CEMS for: O2, SO2, NOx, CO and Opacity. The CEMS shall be installed, calibrated and certified in accordance with 40 CFR 60.13 and Part 60 Appendices A and F, and the applicable performance specification test of 40 CFR Part 60 Appendix B.	a. & d.	Complied with requirement for O2, SO2, NOx and CO. Opacity cannot be measured when a Wet Gas Scrubber is used. See **Attachment 1** concerning CITGO's AMP request.
FCCU-A	12	Effective December 1, 2005 (New) October 1, 2005 (Old)	Quarterly CGA Effective December 1, 2005 and Ongoing	For O2, SO2, NOx and CO CEMS: In lieu of the requirements of 40 CFR Part 60, Appendix F §§ 5.1.1, 5.1.3, and 5.1.4, may conduct: a RAA or RATA every three years and a Cylinder Gas Audit ("CGA") each calendar quarter in which a RAA or RATA is not performed.	a.	Complied with requirement. Quarterly Cylinder Gas Audits were successfully performed in 1Q12 and 2Q12.
FCCU-B	12	Effective April 1, 2006 (New) October 1, 2005 (Old)	Quarterly CGA Effective April 1, 2006 and Ongoing	For O2, SO2, NOx and CO CEMS: In lieu of the requirements of 40 CFR Part 60, Appendix F §§ 5.1.1, 5.1.3, and 5.1.4, may conduct: a RAA or RATA every three years and a Cylinder Gas Audit ("CGA") each calendar quarter in which a RAA or RATA is not performed.	a.	Complied with requirement. Quarterly Cylinder Gas Audits were successfully performed in 1Q12 and 2Q12.

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Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-C	12	Effective February 1, 2006 (New) October 1, 2005 (Old)	Quarterly CGA Effective February 1, 2006 and Ongoing	For O2, SO2, NOx and CO CEMS: In lieu of the requirements of 40 CFR Part 60, Appendix F §§ 5.1.1, 5.1.3, and 5.1.4, may conduct: a RAA or RATA every three years and a Cylinder Gas Audit ("CGA") each calendar quarter in which a RAA or RATA is not performed.	a.	Complied with requirement. Quarterly Cylinder Gas Audits were successfully performed in 1Q12 and 2Q12.
FCCU-A	31	March 27, 2009	March 27, 2009 and Ongoing	CITGO shall use NOx and O2 CEMS to monitor performance and to report compliance with the terms and conditions of this Consent Decree. CITGO shall make CEMS data available to EPA as soon as practicable following an EPA request for such data.	a. & b.	Complied with requirement. There were no 7-day or 365-day rolling average exceedances during this reporting period. The NOx average emissions at 0% O2 averaged 15.9 ppmvd for 1Q12 and 16.6 ppmvd for the 2Q12. The end of period 365-day rolling average was 14.5 ppmvd.
FCCU-B	31	March 27, 2009	March 27, 2009 and Ongoing	CITGO shall use NOx and O2 CEMS to monitor performance and to report compliance with the terms and conditions of this Consent Decree. CITGO shall make CEMS data available to EPA as soon as practicable following an EPA request for such data.	a. & b.	Complied with requirement. There were no 7-day or 365-day rolling average exceedances during this reporting period. The NOx average emissions at 0% O2 averaged 16.5 ppmvd for 1Q12 and 17.5 ppmvd for the 2Q12. The end of period 365-day rolling average was 16.8 ppmvd.
FCCU-C	31	July 6, 2009	July 6, 2009 and Ongoing	CITGO shall use NOx and O2 CEMS to monitor performance and to report compliance with the terms and conditions of this Consent Decree. CITGO shall make CEMS data available to EPA as soon as practicable following an EPA request for such data.	a. & b.	Complied with requirement. There were no 7-day or 365-day rolling average exceedances during this reporting period. The NOx average emissions at 0% O2 averaged 19.0 ppmv for 1Q12 and 18.4 ppmv for the 2Q12. The end of period 365-day rolling average was 16.0 ppmvd.

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Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-A	41	Effective December 1, 2005 (New) October 1, 2005 (Old)	December 1, 2005 and Ongoing	Beginning on the dates set forth in Paragraph 12, shall use SO2 and O2 CEMS to monitor performance and report compliance with terms and conditions of Consent Decree.	a. & b.	Complied with requirement. There were no 7-day or 365-day rolling average exceedances during this reporting period. The 7-day average SO2 emissions at 0% O2 averaged 0.6 & 0.4 ppmvd for 1Q12 and 2Q12, respectively. The end of period 365-day rolling average was 0.4 ppmvd.
FCCU-B	41	Effective April 1, 2006 (New) October 1, 2005 (Old)	April 1, 2006 and Ongoing	Beginning on the dates set forth in Paragraph 12, shall use SO2 and O2 CEMS to monitor performance and report compliance with terms and conditions of Consent Decree.	a. & b.	Complied with requirement. There were no 7-day or 365-day rolling average exceedances during this reporting period. The 7-day average SO2 emissions at 0% O2 averaged 1.3 & 1.2 ppmvd for 1Q12 and 2Q12, respectively. The end of period 365-day rolling average was 1.3 ppmvd.
FCCU-C	41	Effective February 1, 2006 (New) October 1, 2005 (Old)	February 1, 2006 and Ongoing	Beginning on the dates set forth in Paragraph 12, shall use SO2 and O2 CEMS to monitor performance and report compliance with terms and conditions of Consent Decree.	a. & b.	Complied with requirement. There were no 7-day or 365-day rolling average exceedances during this reporting period. The 7-day average SO2 emissions at 0% O2 averaged 2.0 & 0.5 ppmvd for 1Q12 and 2Q12, respectively. The end of period 365-day rolling average was 0.6 ppmvd.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-B	44b	Effective December 31, 2006	EPA Approved AMP June 18, 2012	Unless CITGO agrees to accept an emission limit of 0.5 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis, EPA will use the data collected under Paragraph 47, as well as other, available and relevant information, to establish PM emission limits for each FCCU which can be met with a reasonable certainty of compliance but which shall be no lower than 0.5 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis. EPA will determine the limits based on : (i) the level of performance during the Performance Test(s); (ii) a reasonable certainty of compliance; and (iii) any other available and relevant information. EPA will notify CITGO of its determination of an appropriate emission limit or limits. During any dispute under this Paragraph, CITGO shall continue to operate the WGSs required under this Paragraph in a manner consistent with good air pollution control practices in lieu of meeting the EPA-established limit under this Paragraph.	a. & d.	Beginning in 2006, CITGO has conducted annual PM tesing in accordance with paragraph 47. EPA has not yet established PM emission limits. Note: EPA approved CITGO's AMP request on June 18, 2012.
FCCU-C	44b	Effective December 31, 2007	EPA Approved AMP June 18, 2012	Unless CITGO agrees to accept an emission limit of 0.5 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis, EPA will use the data collected under Paragraph 47, as well as other, available and relevant information, to establish PM emission limits for each FCCU which can be met with a reasonable certainty of compliance but which shall be no lower than 0.5 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis. EPA will determine the limits based on : (i) the level of performance during the Performance Test(s); (ii) a reasonable certainty of compliance; and (iii) any other available and relevant information. EPA will notify CITGO of its determination of an appropriate emission limit or limits. During any dispute under this Paragraph, CITGO shall continue to operate the WGSs required under this Paragraph in a manner consistent with good air pollution control practices in lieu of meeting the EPA-established limit under this Paragraph.	a. & d.	Beginning in 2006, CITGO has conducted annual PM tesing in accordance with paragraph 47. EPA has not yet established PM emission limits. EPA approved CITGO's AMP request on June 18, 2012.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-A	46	Effective March 31, 2010	EPA Approved AMP June 18, 2012	In accordance with NSPS regulations at 40 CFR, Part 60, Subpart J, shall comply with an emission limit of 1.0 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis.	a., b. & d.	Complied with requirement. EPA approved CITGO's AMP request on June 18, 2012. EPA Region VI set a 3-hour average basis for parametric monitoring used to indicate compliance with RMACT 2 and Paragraphs 44 and 46, as applicable. Compliance with PM requirements is determined through stack test and parametric monitoring. The Lake Charles Refinery conducted the sixth annual stack test on August 23, 2011. Measured PM emissions were 0.20 lbs PM per 1,000 lbs coke burn.
FCCU-B	46	Effective December 31, 2006	EPA Approved AMP June 18, 2012	In accordance with NSPS regulations at 40 CFR, Part 60, Subpart J, shall comply with an emission limit of 1.0 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis.	a., b. & d.	Complied with requirement. EPA approved CITGO's AMP request on June 18, 2012. EPA Region VI set a 3-hour average basis for parametric monitoring used to indicate compliance with RMACT 2 and Paragraphs 44 and 46, as applicable. Compliance with PM requirements is determined through stack test and parametric monitoring. The Lake Charles Refinery conducted the sixth annual stack test on May 26 & 27, 2011 (conducted during EPA ICR FCCU testing). Measured PM emissions were 0.16 lbs PM per 1,000 lbs coke burn.

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Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-C	46	Effective December 31, 2007	EPA Approved AMP June 18, 2012	In accordance with NSPS regulations at 40 CFR, Part 60, Subpart J, shall comply with an emission limit of 1.0 pounds of PM per 1000 pounds of coke burned on a 3-hour average basis.	a., b. & d.	Complied with requirement except as noted below. EPA approved CITGO's AMP request on June 18, 2012. EPA Region VI set a 3-hour average basis for parametric monitoring used to indicate compliance with RMACT 2 and Paragraphs 44 and 46, as applicable. Compliance with PM requirements is determined through stack test and parametric monitoring. The Lake Charles Refinery conducted the sixth annual stack test on August 25, 2011. Measured PM emissions were 0.19 lbs PM per 1,000 lbs coke burn. During the 1Q12, parametric parameters were exceeded on 2 days (28 hours total) during a unit startup.
FCCU-A	47	By June 30, 2010 and Ongoing	July 2006 and Ongoing	For PM: CITGO shall follow the stack test protocol specified in 40 CFR. § 60.106(b)(2) using EPA Reference Method 5B to measure PM emissions.	a. & d.	Complied with requirement. See **Attachment 1**. Method 5B used since FCCU has a WGS for PM control.
FCCU-B	47	By March 31, 2007 and Ongoing	July 2006 and Ongoing	For PM: CITGO shall follow the stack test protocol specified in 40 CFR. § 60.106(b)(2) using EPA Reference Method 5B to measure PM emissions.	a. & d.	Complied with requirement. See **Attachment 1**. Method 5B used since FCCU has a WGS for PM control.
FCCU-C	47	By March 31, 2008 and Ongoing	July 2006 and Ongoing	For PM: CITGO shall follow the stack test protocol specified in 40 CFR. § 60.106(b)(2) using EPA Reference Method 5B to measure PM emissions.	a. & d.	Complied with requirement. See **Attachment 1**. Method 5B used since FCCU has a WGS for PM control.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-A	47	Initially in 2010 and annually thereafter	Sixth stack test on August 23, 2011	Until termination of the Consent Decree, shall conduct annual PM stack tests at FCCU. Upon demonstrating through at least three (3) annual tests that the PM limits are not being exceeded at a particular Covered FCCU, CITGO may request EPA approval to conduct tests less frequently than annually at that Covered FCCU. Such approval will not be unreasonably withheld.	a. & d.	Complied with requirement.
FCCU-B	47	Initially in 2007 and annually thereafter	Sixth stack test on May 26 & 27, 2011	Until termination of the Consent Decree, shall conduct annual PM stack tests at FCCU. Upon demonstrating through at least three (3) annual tests that the PM limits are not being exceeded at a particular Covered FCCU, CITGO may request EPA approval to conduct tests less frequently than annually at that Covered FCCU. Such approval will not be unreasonably withheld.	a. & d.	Complied with requirement.
FCCU-C	47	Initially in 2008 and annually thereafter	Sixth stack test on August 25, 2011	Until termination of the Consent Decree, shall conduct annual PM stack tests at FCCU. Upon demonstrating through at least three (3) annual tests that the PM limits are not being exceeded at a particular Covered FCCU, CITGO may request EPA approval to conduct tests less frequently than annually at that Covered FCCU. Such approval will not be unreasonably withheld.	a. & d.	Complied with requirement.
FCCU-A	48	Effective January 1, 2006 (New) October 1, 2005 (Old)	January 1, 2006 and Ongoing	Shall comply with emission limits of 100 ppmvd CO corrected to 0% O2 on a 365-day rolling average basis and 500 ppmvd CO corrected to 0% O2 on a 1-hour average basis by no later than the date of installation of CO CEMS pursuant to Paragraph 12 of this Consent Decree.	a.& d.	Paragraph 48 is silent regarding the applicability of the 1-hour average CO limit during Startup, Shutdown and Malfunction events. Please see **Attachment 2** for discussion of CITGO's understanding and position.
FCCU-B	48	Effective May 1, 2006 (New) October 1, 2005 (Old)	May 1, 2006 and Ongoing	Shall comply with emission limits of 100 ppmvd CO corrected to 0% O2 on a 365-day rolling average basis and 500 ppmvd CO corrected to 0% O2 on a 1-hour average basis by no later than the date of installation of CO CEMS pursuant to Paragraph 12 of this Consent Decree.	a.& d.	Paragraph 48 is silent regarding the applicability of the 1-hour average CO limit during Startup, Shutdown and Malfunction events. Please see **Attachment 2** for discussion of CITGO's understanding and position.

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FCCU-C	48	Effective March 1, 2006 (New) October 1, 2005 (Old)	March 1, 2006 and Ongoing	Shall comply with emission limits of 100 ppmvd CO corrected to 0% O2 on a 365-day rolling average basis and 500 ppmvd CO corrected to 0% O2 on a 1-hour average basis by no later than the date of installation of CO CEMS pursuant to Paragraph 12 of this Consent Decree.	a.& d.	Paragraph 48 is silent regarding the applicability of the 1-hour average CO limit during Startup, Shutdown and Malfunction events. Please see **Attachment 2** for discussion of CITGO's understanding and position.
FCCU-A	50	Effective December 1, 2005 (New) October 1, 2005 (Old)	December 1, 2005 and Ongoing	Beginning on the dates set forth in Paragraph 12, shall use CO and O2 CEMS to monitor performance and report compliance with terms and conditions of Consent Decree.	a. & b.	Unit was compliant with the 500 ppmvd CO corrected to 0% O2 on a 1-hour average basis for each calendar day during the past two quarters except as follows: 4 days during the 1Q12 and 1 day during the 2Q12. NOTE: 1Q12 events (27 hrs total) were due to an unplanned unit shutdown and a unit upset caused by feed meter malfunction. 2Q12 event (1 hour) associated with the shutdown of an air blower. The 1-hour average CO emission in ppmvd at 0% O2 was 52.4 ppmvd for 1Q12 and 28.4 ppmvd for 2Q12. The end of period 365-day rolling average was 45.7 ppmvd.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-B	50	Effective April 1, 2006 (New) October 1, 2005 (Old)	April 1, 2006 and Ongoing	Beginning on the dates set forth in Paragraph 12, shall use CO and O2 CEMS to monitor performance and report compliance with terms and conditions of Consent Decree.	a. & b.	Unit was compliant with the 500 ppmvd CO corrected to 0% O2 on a 1-hour average basis for each calendar day during the past two quarters except as follows: 2 days during the 1Q12. NOTE: 1Q12 events (4 hrs total) were due to a reduction of steam pressure caused by a heavy rain event and a change of regeneration air availability caused by the shutdown of C-FCCU. The 1-hour average CO emission in ppmvd at 0% O2 was 55.2 ppmvd for 1Q12 and 55.1 ppmvd for 2Q12. The end of period 365-day rolling average was 54.5 ppmvd.
FCCU-C	50	Effective February 1, 2006 (New) October 1, 2005 (Old)	February 1, 2006 and Ongoing	Beginning on the dates set forth in Paragraph 12, shall use CO and O2 CEMS to monitor performance and report compliance with terms and conditions of Consent Decree.	a. & b.	Unit was compliant with the 500 ppmvd CO corrected to 0% O2 on a 1-hour average basis for each calendar day during the past two quarters except as follows: 6 days during the 1Q12. NOTE: 1Q12 events (19 hrs total) were due to a reduction of steam pressure caused by a heavy rain event, a planned unit shutdown and subsequent startup, a unit upset caused by an electrical fault and a feed flow controller failure. The 1-hour average CO emission in ppmvd at 0% O2 was 92.0 ppmvd for 1Q12 and 88.6 ppmvd for 2Q12. The end of period 365-day rolling average was 79.0 ppmvd.

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Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-A	51	Effective January 1, 2006 (New) October 1, 2005 (Old)	January 1, 2006 and Ongoing	For CO: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for CO. [Compliance with CEMS requirements. See 40 CFR 60.7(c), 60.13 and 60.105(a)(2).]	a. & d.	CEMS calibration requirements are different in Consent Decree than NSPS. See 40 CFR 60.7(c), 60.13 and 60.105(a)(2). Note: See Paragraph 12 of this Consent Decree - will use CGA or RATAs in place of Appendix F requirements. Non-compliance with CEMS downtime requirements (i.e., > 5% of the operating time in the semi-annual reporting period) will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the CEMS reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Complied with requirement. See CITGO's July 30, 2012 semi-annual Part 60 Subpart J Report to the LDEQ entitled Semi-Annual Periodic Report, 40 CFR Part 63 Subpart UUU, 40 CFR Part 60 Subpart J.

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Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-B	51	Effective May 1, 2006 (New) October 1, 2005 (Old)	April 10, 2006 at CITGO request and Ongoing	For CO: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for CO. [Compliance with CEMS requirements. See 40 CFR 60.7(c), 60.13 and 60.105(a)(2).]	a. & d.	CEMS calibration requirements are different in Consent Decree than NSPS. See 40 CFR 60.7(c), 60.13 and 60.105(a)(2). Note: See Paragraph 12 of this Consent Decree - will use CGA or RATAs in place of Appendix F requirements. Non-compliance with CEMS downtime requirements (i.e., > 5% of the operating time in the semi-annual reporting period) will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the CEMS reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Complied with requirement. See CITGO's July 30, 2012 semi-annual Part 60 Subpart J Report to the LDEQ entitled Semi-Annual Periodic Report, 40 CFR Part 63 Subpart UUU, 40 CFR Part 60 Subpart J.

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FCCU-C	51	Effective March 1, 2006 (New) October 1, 2005 (Old)	March 1, 2006 and Ongoing	For CO: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for CO. [Compliance with CEMS requirements. See 40 CFR 60.7(c), 60.13 and 60.105(a)(2).]	a. & d.	CEMS calibration requirements are different in Consent Decree than NSPS. See 40 CFR 60.7(c), 60.13 and 60.105(a)(2). Note: See Paragraph 12 of this Consent Decree - will use CGA or RATAs in place of Appendix F requirements. Non-compliance with CEMS downtime requirements (i.e., > 5% of the operating time in the semi-annual reporting period) will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the CEMS reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Complied with requirement. See CITGO's July 30, 2012 semi-annual Part 60 Subpart J Report to the LDEQ entitled Semi-Annual Periodic Report, 40 CFR Part 63 Subpart UUU, 40 CFR Part 60 Subpart J.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-A	51	Effective January 1, 2006 (New) October 1, 2005 (Old)	January 1, 2006 and Ongoing	For CO: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for CO. Compliance with CEMS and CO emission limits. See 40 CFR 60.7(c), 60.105(a)(2) and 60.103(a) [500 ppm by volume - dry basis] and 60.105(e)(2) - hourly measure of CO.	a., b. & d.	Paragraph 51 is silent regarding the applicability of the 1-hour average CO limits during Startup, Shutdown and Malfunction events. Please see **Attachment 2** for discussion of CITGO's understanding and position. Non-compliance with the 500 ppmvd CO limit on a 1-hour average basis [see 40 CFR 60.103(a) and 60.105(e)(2)] for each calendar day will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the exceedence reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Unit was compliant with the 500 ppmvd CO limit on a 1-hour average basis [see 40 CFR 60.103(a) and 60.105(e)(2)] for each calendar day during the past two quarters [see Paragraph 166 for details on quarterly compliance] except as follows: 3 days during the 1Q12 and 1 day during the 2Q12. NOTE: 1Q12 events (23 hrs total) were due to an unplanned unit shutdown and a unit upset caused by feed meter malfunction. 2Q12 event (1 hour) associated with the shutdown of an air blower. The 1-hour average CO emission in ppmvd was 40.4 ppmvd for 1Q12 and 26.8 ppmvd for 2Q12.

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FCCU-B	51	Effective May 1, 2006 (New) October 1, 2005 (Old)	April 10, 2006 at CITGO request and Ongoing	For CO: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for CO. Compliance with CEMS and CO emission limits. See 40 CFR 60.7(c), 60.105(a)(2) and 60.103(a) [500 ppm by volume - dry basis] and 60.105(e)(2) - hourly measure of CO.	a., b. & d.	Paragraph 51 is silent regarding the applicability of the 1-hour average CO limits during Startup, Shutdown and Malfunction events. Please see **Attachment 2** for discussion of CITGO's understanding and position. Non-compliance with the 500 ppmvd CO limit on a 1-hour average basis [see 40 CFR 60.103(a) and 60.105(e)(2)] for each calendar day will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the exceedence reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Unit was compliant with the 500 ppmvd CO limit on a 1-hour average basis [see 40 CFR 60.103(a) and 60.105(e)(2)] for each calendar day during the past two quarters [see Paragraph 166 for details on quarterly compliance] except as follows: 2 days during the 1Q12. NOTE: 1Q12 events (3 hrs total) were due to a reduction of steam pressure caused by a heavy rain event and a change of regeneration air availability caused by the shutdown of C-FCCU. The 1-hour average CO emission in ppmvd was 51.8 ppmvd for 1Q12 and 52.6 ppmvd for 2Q12.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-C	51	Effective March 1, 2006 (New) October 1, 2005 (Old)	March 1, 2006 and Ongoing	For CO: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for CO. Compliance with CEMS and CO emission limits. See 40 CFR 60.7(c), 60.105(a)(2) and 60.103(a) [500 ppm by volume - dry basis] and 60.105(e)(2) - hourly measure of CO.	a., b. & d.	Paragraph 51 is silent regarding the applicability of the 1-hour average CO limits during Startup, Shutdown and Malfunction events. Please see **Attachment 2** for discussion of CITGO's understanding and position. Non-compliance with the 500 ppmvd CO limit on a 1-hour average basis [see 40 CFR 60.103(a) and 60.105(e)(2)] for each calendar day will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the exceedence reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Unit was compliant with the 500 ppmvd CO limit on a 1-hour average basis [see 40 CFR 60.103(a) and 60.105(e)(2)] for each calendar day during the past two quarters [see Paragraph 166 for details on quarterly compliance] except as follows: 6 days during the 1Q12. NOTE: 1Q12 events (17 hrs total) were due to a reduction of steam pressure caused by a heavy rain event, a planned unit shutdown and subsequent startup, a unit upset caused by an electrical fault and a feed flow controller failure. The 1-hour average CO emission in ppmvd was 76.3 ppmvd for 1Q12 and 82.8 ppmvd for 2Q12.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-A	51	Effective January 1, 2010	January 1, 2010 and Ongoing	For SO2: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for SO2. Compliance with CEMS requirements: See 40 60.105(a)(9); CFR 60.105(a)(12)(ii) and Appendix F (5.1.1 & 5.1.2) for quarterly CGAs and annual RATA; 40 CFR 60.108(d) for daily performance test; 60.13(d)(1); 60.13(e)(2); 60.104(d); and 60.105(a)(13)]	a.	Complied with requirement. Quarterly Cylinder Gas Audits were successfully performed during the First and Second Quarters of 2012.
FCCU-B	51	Effective December 31, 2006	December 31, 2006 and Ongoing	For SO2: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for SO2. Compliance with CEMS requirements: See 40 60.105(a)(9); CFR 60.105(a)(12)(ii) and Appendix F (5.1.1 & 5.1.2) for quarterly CGAs and annual RATA; 40 CFR 60.108(d) for daily performance test; 60.13(d)(1); 60.13(e)(2); 60.104(d); and 60.105(a)(13)]	a.	Complied with requirement. Quarterly Cylinder Gas Audits were successfully performed during the First and Second Quarters of 2012.
FCCU-C	51	Effective December 31, 2007	December 31, 2007 and Ongoing	For SO2: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for SO2. Compliance with CEMS requirements: See 40 60.105(a)(9); CFR 60.105(a)(12)(ii) and Appendix F (5.1.1 & 5.1.2) for quarterly CGAs and annual RATA; 40 CFR 60.108(d) for daily performance test; 60.13(d)(1); 60.13(e)(2); 60.104(d); and 60.105(a)(13)]	a.	Complied with requirement. Quarterly Cylinder Gas Audits were successfully performed during the First and Second Quarters of 2012.

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FCCU-A	51	Effective January 1, 2010	January 1, 2010 and Ongoing	For SO2: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for SO2. Compliance with SO2 emission limits, recordkeeping and reporting requirements: See 40 CFR 60.7(c) and 60.104(b)(1); 60.104(c) and 60.106(h)(4) [50 ppm on a 7-day rolling average basis; O2 free], 60.107(b)(1), 60.107(b)(4) and 60.107(c)(1).	a., b. & d.	Non-compliance with the SO2 emission limit of 50 ppmvd at 0% O2 on a 7-day rolling average basis will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the exceedence reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Unit was compliant with the 50 ppmvd at 0% O2 SO2 limit on a 7-day rolling average basis for each calendar day during the past two quarters [see Paragraph 166 for details on quarterly compliance] and met the requirement for a minimum of 22 valid days of data to be obtained for every 30 rolling successive calendar days. See CITGO's July 30, 2012 semi-annual Part 60 Subpart J Report to the LDEQ entitled Semi-Annual Periodic Report, 40 CFR Part 63 Subpart UUU, 40 CFR Part 60 Subpart J. The 7-day average SO2 emission in ppmvd was 0.6 ppmvd for the 1Q12 and 0.2 ppmvd for the 2Q12.

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FCCU-B	51	Effective December 31, 2006	December 31, 2006 and Ongoing	For SO2: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for SO2. Compliance with SO2 emission limits, recordkeeping and reporting requirements: See 40 CFR 60.7(c) and 60.104(b)(1); 60.104(c) and 60.106(h)(4) [50 ppm on a 7-day rolling average basis; O2 free], 60.107(b)(1), 60.107(b)(4) and 60.107(c)(1).	a., b. & d.	Non-compliance with the SO2 emission limit of 50 ppmvd at 0% O2 on a 7-day rolling average basis will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the exceedence reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Unit was compliant with the 50 ppmvd at 0% O2 SO2 limit on a 7-day rolling average basis for each calendar day during the past two quarters [see Paragraph 166 for details on quarterly compliance] and met the requirement for a minimum of 22 valid days of data to be obtained for every 30 rolling successive calendar days. See CITGO's July 30, 2012 semi-annual Part 60 Subpart J Report to the LDEQ entitled Semi-Annual Periodic Report, 40 CFR Part 63 Subpart UUU, 40 CFR Part 60 Subpart J. The 7-day average SO2 emission in ppmvd was 1.3 ppmvd for the 1Q12 and 1.2 ppmvd for the 2Q12.

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FCCU-C	51	Effective December 31, 2007	December 31, 2007 and Ongoing	For SO2: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for SO2. Compliance with SO2 emission limits, recordkeeping and reporting requirements: See 40 CFR 60.7(c) and 60.104(b)(1); 60.104(c) and 60.106(h)(4) [50 ppm on a 7-day rolling average basis; O2 free], 60.107(b)(1), 60.107(b)(4) and 60.107(c)(1).	a., b. & d.	Non-compliance with the SO2 emission limit of 50 ppmvd at 0% O2 on a 7-day rolling average basis will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the exceedence reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Unit was compliant with the 50 ppmvd at 0% O2 SO2 limit on a 7-day rolling average basis for each calendar day during the past two quarters [see Paragraph 166 for details on quarterly compliance] and met the requirement for a minimum of 22 valid days of data to be obtained for every 30 rolling successive calendar days. See CITGO's July 30, 2012 semi-annual Part 60 Subpart J Report to the LDEQ entitled Semi-Annual Periodic Report, 40 CFR Part 63 Subpart UUU, 40 CFR Part 60 Subpart J. The 7-day average SO2 emission in ppmvd was 2.0 ppmvd for the 1Q12 and 0.5 ppmvd for the 2Q12.

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FCCU-A	51	Effective January 1, 2010	January 1, 2010 and Ongoing	For O2: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for O2. Compliance with O2 CEMS requirements: See 40 CFR 60.105(a)(10), 40 CFR 60.105(a)(12)(ii) and Appendix F (5.1.1 & 5.1.2) for quarterly CGAs and annual RATA; 60.13(d)(1); 60.13(e)(2); 60.104(d); and 60.105(a)(13).	a., b. & d.	Quarterly Cylinder Gas Audit(s) were successfully performed in the first and second quarters of 2012. Complied with requirement. Non-compliance with CEMS downtime requirements (i.e., > 5% of the operating time in the semi-annual reporting period) will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the CEMS reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Downtime for the combined SO2/O2 CEMS was 2.86% during the semi-annual reporting period. In addition, SO2/O2 analyzers met the requirement for a minimum of 22 valid days of data to be obtained for every 30 rolling successive calendar days. See CITGO's July 30, 2012 semi-annual Part 60 Subpart J report to the LDEQ entitled Semi-Annual Periodic Report, 40 CFR Part 63 Subpart UUU, 40 CFR Part 60 Subpart J.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
FCCU-B	51	Effective December 31, 2006	December 31, 2006 and Ongoing	For O2: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for O2. Compliance with O2 CEMS requirements: See 40 CFR 60.105(a)(10), 40 CFR 60.105(a)(12)(ii) and Appendix F (5.1.1 & 5.1.2) for quarterly CGAs and annual RATA; 60.13(d)(1); 60.13(e)(2); 60.104(d); and 60.105(a)(13).	a., b. & d.	Quarterly Cylinder Gas Audit(s) were successfully performed in the first and second quarters of 2012. Complied with requirement. Non-compliance with CEMS downtime requirements (i.e., > 5% of the operating time in the semi-annual reporting period) will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the CEMS reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Downtime for the combined SO2/O2 CEMS was 1.42% during the semi-annual reporting period. In addition, SO2/O2 analyzers met the requirement for a minimum of 22 valid days of data to be obtained for every 30 rolling successive calendar days. See CITGO's July 30, 2012 semi-annual Part 60 Subpart J report to the LDEQ entitled Semi-Annual Periodic Report, 40 CFR Part 63 Subpart UUU, 40 CFR Part 60 Subpart J.

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FCCU-C	51	Effective December 31, 2007	December 31, 2007 and Ongoing	For O2: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for O2. Compliance with O2 CEMS requirements: See 40 CFR 60.105(a)(10), 40 CFR 60.105(a)(12)(ii) and Appendix F (5.1.1 & 5.1.2) for quarterly CGAs and annual RATA; 60.13(d)(1); 60.13(e)(2); 60.104(d); and 60.105(a)(13).	a., b. & d.	Quarterly Cylinder Gas Audit(s) were successfully performed in the first and second quarters of 2012. Complied with requirement. Non-compliance with CEMS downtime requirements (i.e., > 5% of the operating time in the semi-annual reporting period) will be reported in both this report and CITGO's semi-annual report pursuant to 40 CFR Part 60 Subpart J requirements. Otherwise, CITGO will meet the CEMS reporting compliance requirements under this Consent Decree by referencing the semi-annual report sent to the LDEQ as shown below. Downtime for the combined SO2/O2 CEMS was 1.08% during the semi-annual reporting period. In addition, SO2/O2 analyzers met the requirement for a minimum of 22 valid days of data to be obtained for every 30 rolling successive calendar days. See CITGO's July 30, 2012 semi-annual Part 60 Subpart J report to the LDEQ entitled Semi-Annual Periodic Report, 40 CFR Part 63 Subpart UUU, 40 CFR Part 60 Subpart J.

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FCCU-A	51	Effective March 31, 2010	EPA Approved AMP June 18, 2012	For PM: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for PM. Compliance with PM limit in lbs/ton of coke burn (40 CFR 60.102(a)(1) and for opacity (40 CFR 60.102(a)(2)). Determine compliance with PM requirement via stack test (See 40 CFR 60.106(b))	a. & d.	Complied with requirement. Use of a Wet Gas Scrubber for control of PM precludes the use of a COMS for the measurement of opacity. See **Attachment 1** for discussion concerning CITGO's AMP request. The Lake Charles Refinery conducted the sixth annual stack test on August 23, 2011. Measured PM emissions were 0.20 lbs PM per 1,000 lbs coke burn.
FCCU-B	51	Effective December 31, 2006	EPA Approved AMP June 18, 2012	For PM: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for PM. Compliance with PM limit in lbs/ton of coke burn (40 CFR 60.102(a)(1) and for opacity (40 CFR 60.102(a)(2)). Determine compliance with PM requirement via stack test (See 40 CFR 60.106(b))	a. & d.	Complied with requirement. Use of a Wet Gas Scrubber for control of PM precludes the use of a COMS for the measurement of opacity. See **Attachment 1** for discussion concerning CITGO's AMP request. The Lake Charles Refinery conducted the sixth annual stack test on May 26 & 27, 2011 (conducted during EPA ICR FCCU testing). Measured PM emissions were 0.16 lbs PM per 1,000 lbs coke burn.

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FCCU-C	51	Effective December 31, 2007	EPA Approved AMP June 18, 2012	For PM: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for PM. Compliance with PM limit in lbs/ton of coke burn (40 CFR 60.102(a)(1) and for opacity (40 CFR 60.102(a)(2)). Determine compliance with PM requirement via stack test (See 40 CFR 60.106(b))	a. & d.	Complied with requirement except as noted below. Use of a Wet Gas Scrubber for control of PM precludes the use of a COMS for the measurement of opacity. See **Attachment 1** for discussion concerning CITGO's AMP request. The Lake Charles Refinery conducted the sixth annual stack test on August 25, 2011. Measured PM emissions were 0.19 lbs PM per 1,000 lbs coke burn. During the 1Q12, parametric parameters were exceeded on 2 days (28 hours total) during a unit startup.
FCCU-A	51	Effective March 31, 2010	March 31, 2010 and Ongoing	For PM: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for PM. Record daily coke burnoff calculation and hours of operation (40 CFR 60.105(c))	a.	Complied with requirement.
FCCU-B	51	Effective December 31, 2006	December 31, 2006 and Ongoing	For PM: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for PM. Record daily coke burnoff calculation and hours of operation (40 CFR 60.105(c))	a.	Complied with requirement.

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FCCU-C	51	Effective December 31, 2007	December 31, 2007 and Ongoing	For PM: The FCCU regenerator shall be an "affected facility," as that term is used in 40 CFR Part 60, Subparts A and J, and shall be subject to all of the requirements of NSPS Subparts A and J for PM. Record daily coke burnoff calculation and hours of operation (40 CFR 60.105(c))	a.	Complied with requirement.
Heaters & Boilers	60	Effective September 30, 2008.	February 28, 2009	CITGO shall install, certify, calibrate, maintain, and operate the CEMS required by Paragraph 59 in accordance with 40 CFR. Part 60, Appendices A and F, and the applicable performance specification test of 40 CFR. Part 60, Appendix B. However, in lieu of the requirements of 40 CFR. Part 60, Appendix F §§ 5.1.1, 5.1.3 and 5.1.4, CITGO may conduct either a Relative Accuracy Audit ("RAA") or a Relative Accuracy Test Audit ("RATA") once every three (3) years and shall conduct Cylinder Gas Audits ("CGA") each calendar quarter during which a RAA or a RATA is not performed.	a.	Complied with requirement. Quarterly Cylinder Gas Audits / RATA's were conducted in the 1st and 2nd quarters of 2012.
Heaters & Boilers	64a	Effective January 26, 2005	January 26, 2005 and Ongoing	Comply with NSPS requirements of Subparts A and J for fuel gas combustion devices except for those heaters and boilers listed in Appendix E of Consent Decree [Note: whose compliance date is after this reporting period].	a., b. & d.	Complied with emission standard and CEMS monitoring requirements except as noted below. The F-2 Fuel Gas Drum exceeded the NSPS Subpart J hydrogen sulfide concentration limit on one day; February 5, 2012 for 2 rolling 3 hour periods - 4 hours total (0.1% of hours in third quarter). This event was associated with an equipment outage and spike in H2S level.

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						The 1-hour average H2S emission in ppmvd from the F-2 drum was 17.7 ppmvd for 1Q12 and 19.7 ppmvd for 2Q12. The 1-hour average H2S emission in ppmvd from the F-104 drum was 12.3 ppmvd for 1Q12 and 14.3 ppmvd for 2Q12. The status of compliance with the CEMS downtime and emissions standard is documented in the Lake Charles Refinery's Semi-Annual Report on NSPS Subpart J Monitoring Systems Summary dated July 30, 2012.
Heaters & Boilers	64a	Effective March 31, 2005	March 31, 2005 and Ongoing	Fuel gas burned at C-Reformer must comply with NSPS requirements of Subparts A and J for fuel gas combustion devices as listed in Appendix E. Install H2S analyzer to monitor compliance and initiate monitoring.	a., b. & d.	Complied with this requirement. The 1-hour average H2S emission in ppmvd from the F-535 drum was 11.7 ppmvd for 1Q12 and 14.2 ppmvd for 2Q12. The status of compliance for CEMS downtime and emissions standard is documented in the Lake Charles Refinery's Semi-Annual Report on NSPS Subpart J Monitoring Systems Summary dated July 30, 2012.
Heaters & Boilers	64a	Effective January 31, 2006 (New) September 30, 2005 (Old)	January 31, 2006 and Ongoing	The fuel gas burned in the CLAW furnaces and boilers listed in Appendix E must comply with NSPS requirements of Subparts A and J for fuel gas combustion devices.	a. & d.	On November 20, 2008, the CLAW fuel gas system was idled and is not in service at this time. The idled equipment include; Boilers BF-1, BF-2, BF-3, BF-4, BF-5, Duo-Sol N-2A, N-2B, N-2C, S-1, S-2, P-2, Furfural BA-1, BA-2A, BA-2B, BA-3, MEK-1 BA-1, BA-2, MEK-2 BA-1, BA-2, BA-3 Vacuum BA-1 and Vacuum BA-101

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Heaters & Boilers	64c	Effective January 31, 2006 (New) December 31, 2005 (Old)	January 31, 2006 Compliance to start upon EPA approval of AMP	Pursuant to Appendix E, an AMP application was submitted for fuel gas from the C-Dock Butane Unloading Line. The equipment will become an affected facility when the AMP has been approved or CITGO has fully implemented its approved plan. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.	a.	Awaiting EPA approval of AMP. Pursuant to the schedule in Paragraph 64c, the Lake Charles Refinery submitted an AMP for this low H2S stream on January 31, 2006 as required and reported in the 3rd semi-annual report of 2006.
Other Fuel Gas Combustion Devices (Other than Flaring Devices)	64c	Effective January 31, 2006 (New) December 31, 2005 (Old)	January 31, 2006 Compliance to start upon EPA approval of AMP	Pursuant to Appendix F, an AMP application was submitted for the VCU-01 Fuel Loading Rack Vapor Combustor (a fuel gas combustion device). The equipment will become an affected facility when the AMP has been approved or CITGO has fully implemented its approved plan. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.	a.	Awaiting EPA approval of AMP. Pursuant to the schedule in Paragraph 64c, the Lake Charles Refinery submitted an AMP for this low H2S stream on January 31, 2006 as required and reported in the 3rd semi-annual report of 2006.
Heaters & Boilers	65	Effective January 26, 2005	January 26, 2005 and Ongoing	Discontinue use of fuel oil in any combustion unit except for periods of Natural Gas Curtailment. Nothing herein is intended to limit, or shall be interpreted as limiting, the use of torch oil during FCCU Startups.	a. & d.	Complied with requirement. Further, this paragraph is not intended to be interpreted to limit the use of torch oil in an FCCU regenerator to assist in starting, restarting, maintaining hot standby, or maintaining regenerator heat balance.
SRP	67a	Effective January 26, 2005	January 26, 2005 and Ongoing	SRP shall be an affected facility under NSPS, 40 CFR Part 60, Subparts A and J.	a.	Complied with requirement.

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SRP	68	Effective January 26, 2005	January 26, 2005 and Ongoing	Each of the SRPs shall comply with all applicable provisions of NSPS set forth at 40 CFR. Part 60, Subparts A and J. See requirements at 40 CFR 60.7(c)(1) - (4), 60.7(d), 60.7(f), 60.13(d)(1), 60.13(e)(2), 60.13(h), 60.104(a)(2)(ii), 60.105(a)(6), 60.105(e)(4)(ii), 60.107(e) and 60.107(f). Compliance with the SO_2 and H_2S standard is determined using a stack test as described in 60.106(f).	a.	Complied with requirement except as may be noted below in Paragraph 68a or 68b of this semi-annual report. Compliance documented in the Lake Charles Refinery's Semi-Annual Periodic Report for 40 CFR Part 63 Subpart UUU and 40 CFR Part 60 Subpart J dated July 30, 2012.
SRP	68a	Effective January 26, 2005	January 26, 2005 and Ongoing	Shall, for all periods of operations of the SRPs, comply with 40 CFR 60.104(a)(2) at each SRP except during periods of Start-up, Shutdown or Malfunction, or during a Malfunction of a TGU serving as a control device for the SRP. NOTE: For the purpose of determining compliance with the Sulfur Recovery Plant emission limits of 40 CFR 60.104(a)(2), the "Startup/Shutdown" provisions set forth in NSPS Subpart A shall apply to each SRP and not to the independent start-up or shutdown of a TGU serving as a control device for the SRP. However, the Malfunction exemption set forth in NSPS Subpart A shall apply to each SRP and to the TGU serving as the control device for the SRP.	a., b. & d.	Complied with RSC and H2S requirements at 60.104(a)(2)(ii) at Sulften Tail Gas and Tail Gas II (TG-II) Units at the SRPs except as noted below: Sulften & TG-II units had no emissions in excess of the RSC emission standard. The 1-hour average RSC emission in ppmvd from the Sulften unit was 46.4 ppmvd for 1Q12 and 43.0 ppmvd for 2Q12. The 1-hour average RSC emission in ppmvd from the TG-II unit was 33.2 ppmvd for 1Q12 and 31.9 ppmvd for 2Q12. The TG-II unit is monitored monthly for compliance with the H2S emission standard. There were no exceedences associated with these sampling events. However, there is credible evidence that the 10 ppm H2S standard was exceeded on April 26, 2012 due to a leaking exchanger (single day in 2Q12). Compliance documented in the Lake Charles Refinery's Semi-Annual Periodic Report for 40 CFR Part 63 Subpart UUU and 40 CFR Part 60 Subpart J dated July 30, 2012.

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SRP	68b	Effective January 26, 2005	January 26, 2005 and Ongoing	Monitor all tail gas emission points (stacks) and report excess emissions from each SRP pursuant to 40 CFR 60.7(c), 60.13 and 60.105(a)(6) using CEMS at the emission points. NOTE: See also 60.105(e)(4)(ii)	a., b. & d.	RSC CEMS complied with requirement (i.e., CEMS downtime < 5%). Compliance documented in the Lake Charles Refinery's Semi-Annual Periodic Report for 40 CFR Part 63 Subpart UUU and 40 CFR Part 60 Subpart J dated July 30, 2012.
Sulfuric Acid Plant	72	Effective December 31, 2006	Effective December 31, 2006 and Ongoing	The Lake Charles Sulfuric Acid Plant shall be an affected facility as that term is used in 40 C.F.R. Part 60, Subparts A and H and shall comply with emission limitation of 3.5 lbs of SO_2 per ton of acid produced, three hour average, (expressed as 100 percent sulfur acid); the acid mist standards found in 40 C.F.R. § 60.83; and the emissions monitoring and testing requirements in 40 C.F.R. Part 60, Subparts A and H. The Lake Charles Sulfuric Acid Plant shall comply with the 3.5 lb SO2 per ton limit and the acid mist standards at all times except during periods of Startup, Shutdown or Malfunction of the Sulfuric Acid Plant. The Lake Charles Refinery interprets this requirement to mean that as an "affected facility" under Subpart H, the Sulfuric Acid Plant is also required to meet the SO2 emission standard of 4.0 lbs of SO2 per ton of acid produced, three hour "rolling" average, (expressed as 100 percent sulfur acid) pursuant to 40 C.F.R. §60.82(a), §60.84(e) and ADI Control Number: NR95.	a., b. & d.	Unit was compliant with the 4.0 lbs of SO2 per ton of acid produced (expressed as 100 percent sulfur acid), three hour rolling average requirement. The rolling 3-hour average lbs of SO2 emissions per ton of acid produced was 1.7 lbs for the 1Q12 and 1.3 lbs for 2Q12. See Attachment 3 regarding the Refinery's request and submittal of monitoring data in support of the original AMP request. Refinery is awaiting EPA approval of AMP. Additional information on this requirement is contained in CITGO's July 30, 2012 semi-annual Part 60 Subpart H Report to the LDEQ.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
Sulfuric Acid Plant	72	Effective December 31, 2006	Effective December 31, 2006 and Ongoing	The Lake Charles Sulfuric Acid Plant shall be an affected facility as that term is used in 40 CFR. Part 60, Subparts A and H and shall comply with emission limitation of 3.5 lbs of SO_2 per ton of acid produced, three hour average, (expressed as 100 percent sulfur acid). The Lake Charles Sulfuric Acid Plant shall comply with the 3.5 lb SO2 per ton limit at all times except during periods of Startup, Shutdown or Malfunction of the Sulfuric Acid Plant. The Lake Charles Refinery understands that the emission limit is to be measured as a three hour "rolling" average pursuant to and consistent with 40 CFR. §60.82(a), §60.84(e) and ADI Control Number: NR95.	a., b. & d.	'Unit was compliant with the 3.5 lbs of SO2 per ton of acid produced (expressed as 100 percent sulfur acid), three hour rolling average requirement except as noted below: The Sulfuric Acid Plant exceeded the 3.5 lbs of SO2 per ton of acid produced for 5 rolling 3-hour periods totaling 14 hours during the 1Q12 (0.7%). These events were associated with unit startup and shutdowns. The rolling 3-hour average lbs of SO2 emissions per ton of acid produced was 1.7 lbs for the 1Q12 and 1.3 lbs for 2Q12. See **Attachment 3** regarding the Refinery's request and submittal of monitoring data in support of the original AMP request. Refinery is awaiting EPA approval of AMP.
Sulfuric Acid Plant	72	Effective December 31, 2006	Effective December 31, 2006 and Ongoing	The Lake Charles Sulfuric Acid Plant shall be an affected facility as that term is used in 40 C.F.R. Part 60, Subparts A and H and shall comply with the acid mist standards found in 40 C.F.R. § 60.83. The Lake Charles Sulfuric Acid Plant shall comply with the acid mist standards at all times except during periods of Startup, Shutdown or Malfunction of the Sulfuric Acid Plant. Initial compliance with the acid mist standard and the opacity standard in 40 CFR §60.83 is determined during a performance test pursuant to 40 CFR §60.85. The Performance Test Results for acid mist emissions and opacity were submitted to EPA Region VI and the LDEQ on December 29, 2006.	a.	Complied with requirement.

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Sulfuric Acid Plant	72	Effective December 31, 2006	Effective December 31, 2006 and Ongoing	The Lake Charles Sulfuric Acid Plant shall be an affected facility as that term is used in 40 CFR. Part 60, Subparts A and H and shall comply with the emissions monitoring requirements in 40 CFR. Part 60, Subparts A and H. Compliance with SO2 CEMS requirements (40 CFR 60.84, 60.13(d) and (c)) and recordkeeping requirements (40 CFR 60.84(c)).	a.	Complied with CEMS downtime requirements (i.e., < 5% of the operating time in the semi-annual reporting period). The SO2 CEMS downtime was 0.9% this reporting period. See CITGO's semi-annual Part 60 Subpart H Report to the LDEQ dated July 30, 2012.
SRP	73a	Effective February 28, 2005 and Ongoing	February 28, 2005 and Ongoing	Shall implement the PMO Plan at all times, including periods of Startup, Shutdown and Malfunction of its SRPs.	a.	Complied with requirement.
SRP	73a	Effective February 28, 2005 and Ongoing	February 28, 2005 and semi-annually, if needed	Changes to a PMO Plan related to minimizing Acid Gas Flaring and/or SO2 emissions shall be summarized and reported by CITGO to EPA and the LDEQ in the semi-annual report required under Paragraph 144.	a. & e.	Complied with requirement. **Attachment 4** documents changes made to the PMO during this reporting period.
HC Flaring	74	Effective January 26, 2005	January 26, 2005 and Ongoing	Use Good Air Pollution Control Practices to minimize emissions from hydrocarbon flaring devices [see 60.11(d)]. Implement such good air pollution control practices to minimize Hydrocarbon Flaring Incidents by investigating, reporting and correcting all Hydrocarbon Flaring Incidents in accordance with the procedures in Paragraph 94.	a.	Complied with requirement. See Root Cause Failure Analysis (RCFA) discussion in Paragraph 94.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
HC Flaring Devices	75	Effective on Dates in Appendix G. Some dates extended.	Each Hydrocarbon Flaring Device to be addressed individually.	CITGO owns and operates the NSPS Hydrocarbon Flaring Devices identified in Appendix B-1 to this Consent Decree. By no later than the dates identified in Appendix G, CITGO agrees that each such NSPS HC Flaring Device is an "affected facility" (as that term is used in NSPS, 40 CFR. Part 60) subject to, and required to comply with, the requirements of 40 CFR. Part 60, Subparts A and J, for fuel gas combustion devices used as emergency control devices for quick and safe release of gases.	a. & d.	Complied with this requirement. Based on discussions with EPA's CITGO Consent Decree Coordinator, John L. Jones, and subsequent Consent Decrees issued to other refining companies, entry of this Consent Decree and compliance with the relevant monitoring requirements of this Consent Decree for Hydrocarbon Flaring Devices shall satisfy the notice requirements of 40 C.F.R. 60.7(a) and the initial performance test requirements of 40 C.F.R. § 60.8(a) for hydrogen sulfide in fuel gas fired in hydrocarbon flaring devices.
HC Flaring Devices	75	Effective January 31, 2006 (New) December 31, 2005 (Old)	January 31, 2006 for AMP submittal Compliance to start upon EPA approval of AMP	Agree that 360CB-701 (CB-11) PFU Flare is an "affected facility" (as that term is used in NSPS, 40 CFR. Part 60) subject to, and required to comply with, the requirements of 40 CFR. Part 60, Subparts A and J, for fuel gas combustion devices used as emergency control devices for quick and safe release of gases. Pursuant to Appendix G, an AMP application is to be submitted for fuel gas being burned in the 360CB-701 (CB-11) PFU Flare.	a. & d.	AMP for this low H2S gas stream submitted. Awaiting EPA approval of AMP. Paragraph 75 is silent regarding the applicability timing for AMP compliance. Please see **Attachment 5** for discussion of CITGO's understanding and position. Not yet required to comply with AMP or option identification requirement of this paragraph.
HC Flaring Devices	75	June 30, 2007	June 28, 2007 for AMP submittal Compliance to start upon EPA approval of AMP	Agree that CA1001 CLAW Flare is an "affected facility" (as that term is used in NSPS, 40 CFR. Part 60) subject to, and required to comply with, the requirements of 40 CFR. Part 60, Subparts A and J, for fuel gas combustion devices used as emergency control devices for quick and safe release of gases. Pursuant to Appendix G, an AMP application is to be submitted for fuel gas being burned in the CA1001 CLAW) PFU Flare.	a. & d.	Complied with requirement. An AMP for this treated H2S stream was submitted. EPA did not approve or denyAMP (no action). The CLAW flare was shutdown (idled) on November 10, 2008 and is no longer permitted to operate.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
HC Flaring Devices	75a	Effective January 31, 2006 (New) December 31, 2005 (Old)	January 31, 2006 for AMP submittal Compliance to start upon EPA approval of AMP	For the 360CB-701 (CB-11) PFU Flare, shall implement the compliance option chosen according to the schedule in Appendix G and identify the option that was implemented for this flare in the first Semi-Annual Report due under Paragraph 144 after such compliance is achieved.	a. & d.	AMP for this low H2S gas stream submitted. Awaiting EPA approval of AMP.
HC Flaring Devices	75a	June 30, 2007	June 28, 2007 for AMP submittal Compliance to start upon EPA approval of AMP	For the CA1001 CLAW Flare, shall implement the compliance option chosen according to the schedule in Appendix G and identify the option that was implemented for this flare in the first Semi-Annual Report due under Paragraph 144 after such compliance is achieved.	a. & d.	The CLAW flare was shutdown (idled) on November 10, 2008 and currently is not receiving any process gas.
HC Flaring Devices	75b	Within 90 days after bringing NSPS HC Flaring Device into compliance with NSPS requirements	Performance test results to be submitted following performance testing	For the 360CB-701 (CB-11) PFU Flare, within 90 days of bringing an NSPS Hydrocarbon Flaring Device into compliance, conduct a flare performance test pursuant to 40 CFR.§§ 60.8 and 60.18, or an EPA-approved equivalent method. In lieu of conducting the velocity test required in 40 CFR. §60.18, CITGO may submit velocity calculations which demonstrate that the NSPS Hydrocarbon Flaring Device meets the performance specification required by 40 CFR. §60.18.	a. & d.	Not yet required to comply. Awaiting EPA approval of AMP. Shall provide 30 day notice and shall conduct a performance test to meet hydrogen sulfide standard 60.104(a)(1) using test methods and procedures in 60.106(e)(1).
HC Flaring Devices	75b	Within 90 days after bringing NSPS HC Flaring Device into compliance with NSPS requirements	Performance test results to be submitted following performance testing	For the CA1001 CLAW Flare, within 90 days of bringing an NSPS Hydrocarbon Flaring Device into compliance, conduct a flare performance test pursuant to 40 CFR.§§ 60.8 and 60.18, or an EPA-approved equivalent method. In lieu of conducting the velocity test required in 40 CFR. §60.18, CITGO may submit velocity calculations which demonstrate that the NSPS Hydrocarbon Flaring Device meets the performance specification required by 40 CFR. §60.18.	a. & d.	The CLAW flare was shutdown (idled) on November 10, 2008 and Is no longer permitted to operate.

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HC Flaring	76	Effective January 31, 2006 (New) December 31, 2005 (Old)	January 31, 2006 for AMP submittal Compliance to start upon EPA approval of AMP	For the 360CB-701 (CB-11) PFU Flare, all continuous or intermittent, routinely-generated refinery gases that are combusted shall comply with the emission limit at 40 CFR 60.104(a)(1) by the date specified in Appendix G. The combustion of gases generated by the Startup, Shutdown, or Malfunction of a refinery process unit or released to an NSPS Flaring Device as a result of relief valve leakage or other emergency Malfunction are exempt from the requirement to comply with 40 CFR. § 60.104(a)(1).	a. & d.	AMP submitted. Awaiting EPA approval of AMP. Paragraph 75 is silent regarding the applicability timing for AMP compliance. Please see **Attachment 5** for discussion of CITGO's understanding and position. Not yet required to comply.
HC Flaring	76	June 30, 2007	June 28, 2007 for AMP submittal Compliance to start upon EPA approval of AMP	For the CA1001 CLAW Flare, all continuous or intermittent, routinely-generated refinery gases that are combusted shall comply with the emission limit at 40 CFR 60.104(a)(1) by the date specified in Appendix G. The combustion of gases generated by the Startup, Shutdown, or Malfunction of a refinery process unit or released to an NSPS Flaring Device as a result of relief valve leakage or other emergency Malfunction are exempt from the requirement to comply with 40 CFR. § 60.104(a)(1).	a. & d.	The CLAW flare was shutdown (idled) on November 10, 2008 and Is no longer permitted to operate.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
HC Flaring	76	December 31, 2008	December 31, 2008 and Ongoing	For the B-16 CFH Flare, all continuous or intermittent, routinely-generated refinery gases that are combusted shall comply with the emission limit at 40 CFR 60.104(a)(1) by the date specified in Appendix G. The combustion of gases generated by the Startup, Shutdown, or Malfunction of a refinery process unit or released to an NSPS Flaring Device as a result of relief valve leakage or other emergency Malfunction are exempt from the requirement to comply with 40 CFR. § 60.104(a)(1).	a., b. & d.	Complied with emission standard and CEMS monitoring requirements except as noted below; The B-16 Flare Gas exceeded the NSPS Subpart J hydrogen sulfide concentration limit on two days; January 28 & 30, 2012 for 10 rolling 3 hour periods - 14 hours total (0.6% of hours in first quarter). These events were associated with a compressor shutdown and subsequent flare seal drum decanting. The 1-hour average H2S emission in ppmvd in B-16 flare gas was 15.5 ppmvd for 1Q12 and 1.7 ppmvd for 2Q12. The status of compliance for CEMS downtime and emissions standard is documented in the Lake Charles Refinery's Semi-Annual Report on NSPS Subpart J Monitoring Systems Summary dated July 30, 2012.
HC Flaring	76	February 28, 2010	February 28, 2010 and Ongoing	For the B-12 Unicracker Flare, all continuous or intermittent, routinely-generated refinery gases that are combusted shall comply with the emission limit at 40 CFR 60.104(a)(1) by the date specified in Appendix G. The combustion of gases generated by the Startup, Shutdown, or Malfunction of a refinery process unit or released to an NSPS Flaring Device as a result of relief valve leakage or other emergency Malfunction are exempt from the requirement to comply with 40 CFR. § 60.104(a)(1).	a., b. & d.	Unit was continuously routed to the flare gas recovery system except as follows: 11 days during the 1Q12 and 3 days during the 2Q12. NOTE: The 1Q12 events (68.2 hours total) were associated with a malfunction event (power failure) and a scheduled unit shutdown and subsequent unit startup. The 2Q12 events (1.6 hours total) were associated with malfunction events.

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HC Flaring	76	September 30, 2010	September 30, 2010 and Ongoing	For the B-11 C-Reformer Flare, all continuous or intermittent, routinely-generated refinery gases that are combusted shall comply with the emission limit at 40 CFR 60.104(a)(1) by the date specified in Appendix G. The combustion of gases generated by the Startup, Shutdown, or Malfunction of a refinery process unit or released to an NSPS Flaring Device as a result of relief valve leakage or other emergency Malfunction are exempt from the requirement to comply with 40 CFR. § 60.104(a)(1).	a., b. & d.	Complied with emission standard and CEMS monitoring requirements except as noted below. There were no exceedences of the 3-hour standard from the B-11 flare. The 1-hour average H2S emission in ppmvd in B11 flare gas was 0.6 ppmvd for 1Q12and 0.1 ppmvd for the 2Q12. The status of compliance for CEMS downtime and emissions standard is documented in the Lake Charles Refinery's Semi-Annual Report on NSPS Subpart J Monitoring Systems Summary dated July 30, 2012. The unmonitored portion of the B-11 vent flow was continuously routed to the flare gas recovery system except as follows: 2 days during the 1Q12 and 4 days during the 2Q12. NOTE: The 1Q12 events (0.75 hours total) and 2Q12 events (0.2 hours total) were associated with SSM events.
AG Flaring/Tail Gas Incident	78	January 26, 2005	January 26, 2005 and Ongoing	Investigate Acid Gas Flaring and Tail Gas Incidents, correct conditions that caused incident, and minimize incidents.	a.	Complied with requirement. No Acid Gas or Tail Gas flaring incidents occurred during this reporting period.
AG Flaring	79	Within forty-five (45) days following the end of an Acid Gas Flaring Incident	To be determined for this report	For Acid Gas Flaring Incidents, shall submit an investigative report (i.e., RCFA) to EPA and the LDEQ as described in detail in this paragraph.	a.	Complied with requirement. No Acid Gas Flaring Incidents occurred during this reporting period.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
AG Flaring	80a	Effective January 26, 2005	Any time an Acid Gas Incident occurs	For any AG Flaring Incident, shall take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all significant contributing causes of that AG Flaring Incident.	a.	Complied with requirement. There are no ongoing corrective actions for Acid Gas Flaring Incidents.
AG Flaring	80b	Effective January 26, 2005	Any time an Acid Gas Incident occurs	If EPA does not notify CITGO in writing within forty-five (45) days of receipt of the report(s) required by Paragraph 79 that it objects to one or more aspects of the proposed corrective action(s) and schedule(s) of implementation, then those actions and schedules shall be deemed acceptable for purposes of compliance with Paragraph 80.a.	a.	Complied with requirement. No Acid Gas or Tail Gas flaring incidents occurred during this reporting period.
AG Flaring	80c	Effective January 26, 2005	Any time an Acid Gas Incident occurs	If EPA objects to the proposed corrective actions and/or the schedules of implementation, it shall notify CITGO and explain the basis for its objections in writing within forty-five (45) days following receipt of the reports required by Paragraph 79, and CITGO shall respond promptly to EPA's objections.	d.	No EPA objections received during this reporting period.
Tail Gas Incident	93a	Effective January 26, 2005	Any time a Tail Gas Incident occurs	For Tail Gas Incidents, CITGO shall follow the same investigative, reporting, corrective action and assessment of stipulated penalty procedures as those set forth in Paragraphs 79 through 91 for Acid Gas Flaring Incidents. Those procedures shall be applied to TGU shutdowns, bypasses of a TGU, or other events which result in a Tail Gas Incident, including unscheduled Shutdowns of a Claus Sulfur Recovery Plant. Notwithstanding the foregoing, stipulated penalties shall not apply to a Tail Gas Incident attributable to the scheduled startup or shutdown of an individual train at the SRP located at the Lake Charles Refinery, provided that CITGO demonstrates that it has implemented good air pollution control practices.	a.	Complied with requirement.
Tail Gas Incident	93a for 79	Within forty-five (45) days following the end of a Tail Gas Incident	Met reporting periods as shown in Comments.	For Tail Gas Incidents, shall submit an investigative report (i.e., RCFA) to EPA and the LDEQ as described in detail in this paragraph.	a.	Complied with requirement. There were no Tail Gas flaring incidents this reporting period.

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Tail Gas Incident	93a for 80a	Effective January 26, 2005	Any time a Tail Gas Incident occurs	For any Tail Gas Incident, shall take, as expeditiously as practicable, such interim and/or long-term corrective actions, if any, as are consistent with good engineering practice to minimize the likelihood of a recurrence of the Root Cause and all significant contributing causes of that Tail Gas Incident.	a. & d.	Complied with requirement. See **Attachment 6** for the status of corrective actions for Tail Gas Flaring Incidents.
Tail Gas Incident	93a for 80b	Effective January 26, 2005	Any time a Tail Gas Incident occurs	If EPA does not notify CITGO in writing within forty-five (45) days of receipt of the report(s) required by Paragraph 79 that it objects to one or more aspects of the proposed corrective action(s) and schedule(s) of implementation, then those actions and schedules shall be deemed acceptable for purposes of compliance with Paragraph 80.a.	d.	Complied with requirement. No Acid Gas or Tail Gas flaring incidents occurred during this reporting period.
Tail Gas Incident	93a for 80c	Effective January 26, 2005	Any time a Tail Gas Incident occurs	If EPA objects to the proposed corrective actions and/or the schedules of implementation, it shall notify CITGO and explain the basis for its objections in writing within forty-five (45) days following receipt of the reports required by Paragraph 79, and CITGO shall respond promptly to EPA's objections.	d.	No EPA objections received during this reporting period.
HC Flaring	94	Effective January 26, 2005	Each Semi-Annual Report	Hydrocarbon Flaring Incidents shall be investigated, reported, and corrective action taken, according to paragraphs 79 - 80 with certain exceptions. Investigative report to be completed within 45 days following incident. Investigative report to be submitted as part of Semi-Annual Report.	a., d. & e.	See **Attachment 7** for status of corrective actions for hydrocarbon flaring incidents.
BWON	95	Effective January 26, 2005	Each Semi-Annual Report February 28, 2008	Continuous compliance with all applicable requirements of 40 CFR. Part 61, Subpart FF ("Benzene Waste NESHAP" or "Subpart FF") while also undertaking the measures set forth in Section V.L. to ensure continuing compliance with Subpart FF and to minimize or eliminate fugitive benzene waste emissions.	a.	Complied with requirement. Exceptions are noted below and in reports required 40 CFR Part 61 Subpart FF.
BWON	96a	Effective January 26, 2005	January 26, 2005 and Ongoing	Comply with 6BQ Compliance Option set forth at 40 CFR 61.342(e).	a.	Complied with requirement. Refinery BQ is predicted to be below 6 Megagrams for 2012.

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BWON	100d		Compliance Plan submitted on November 23, 2005 and Ongoing	Upon receipt of approval or approval with conditions, CITGO shall implement the BWON Compliance Plan according to the schedule provided in the approved plan.	a. & d.	Complied with requirement. Although the BWON Compliance Plan was not approved or commented upon, CITGO has implemented the plan. The compliance plan as implemented was attached to the January 31, 2008 certification.
BWON	101a	Effective January 26, 2005	January 26, 2005 and Ongoing	Continue to use primary and secondary carbon canisters as control device under Benzene Waste NESHAP and operate them in series where such systems are in use as of January 26, 2005.	a.	Complied with requirement.
BWON	101a	Effective January 26, 2005	January 26, 2005 and Ongoing	Maintain a complete, accurate and up to date list which includes location of the canisters and whether VOC or benzene is used to monitor for breakthrough.	a.	Complied with requirement.
BWON	101b	Effective January 26, 2005	January 26, 2005 and Ongoing	Except as expressly permitted under Paragraph 101.f, shall not use single carbon canisters for new units or installations that require controls pursuant to Benzene Waste NESHAP.	a.	Complied with requirement.
BWON	101c	Effective January 26, 2005	January 26, 2005 and Ongoing	For dual carbon canister systems, breakthrough between primary and secondary canisters is defined as 5 ppm benzene.	a.	Complied with requirement.
BWON	101d	Effective January 26, 2005	January 26, 2005 and Ongoing	Shall monitor for breakthrough between primary and secondary carbon canisters monthly or in accordance with frequency specified in 40 CFR 61.354(d), whichever is more frequent.	a.	Complied with requirement.
BWON	101e	Effective January 26, 2005	January 26, 2005 and Ongoing	Replace carbon canisters immediately (within 12 hours for 55 gallon canisters and 24 hours for > 55 gallon canisters) when breakthrough is detected between primary and secondary canister, except when monitoring daily for breakthrough in secondary canister.	a.	Complied with requirement.
BWON	101f	Effective October 31, 2004	October 31, 2004 and Ongoing	Single canisters may be used for short-term operations such as with temporary storage tanks or as temporary control devices. Immediate (within 12 hours for canisters of 55 gallons or less and within 24 hours for > 55 gallon canisters) replacement is required upon breakthrough at 1 ppm Benzene.	a.	No temporary applications were used during this reporting period.

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BWON	101g	Effective January 26, 2005	January 26, 2005 and Ongoing	Maintain a supply of carbon canisters.	a.	Complied with requirement.
BWON	101h	Effective January 26, 2005	January 26, 2005 and Ongoing	Maintain carbon canister records for a period of 5 years.	a.	Complied with requirement.
BWON	102	Effective May 31, 2005 and Annually thereafter	April 7, 2009	Per BWON Management of Change Procedures, conduct an annual review of process information, including construction projects, to locate new benzene waste streams for inclusion into the waste stream inventory.	a.	Complied with requirement.
BWON	103c	Effective September 30, 2005 and Biennial thereafter	August 30, 2007 and Ongoing	Complete subsequent audits of the laboratory being used for analyses of Benzene Waste NESHAP samples.	a.	Complied with requirement. Audit conducted in 3rd Quarter of 2011.
BWON	104	Effective January 26, 2005	January 26, 2005 and Ongoing	Review all spills to determine if any benzene waste was generated. Any release of more than 10 pounds in a 24 hour period shall be included in the TAB and BQ.	a.	Complied with requirement.
BWON	105a	Effective May 31, 2005 and Annually thereafter	May 31, 2005 and Ongoing	Provide annual (i.e., once each calendar year) training for all employees who draw benzene waste samples for Benzene Waste NESHAP purposes. NOTE: Annual training is required.	a.	Complied with requirement. No refinery employees are involved in drawing EOL samples for BWON purposes. See explanations on annual training in Paragraph 112b.

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BWON	105b	Effective January 31, 2006 (New - Force Majeure) December 31, 2005 (Old)	January 31, 2006 and Ongoing	Comparable training on standard operating procedures for all control devices and treatment processes shall also be provided to any persons who subsequently become operators assigned to applicable control devices and treatment processes, prior to their assumption of this duty. NOTE: Training to cover standard operating procedures for all control devices and treatment processes used to comply with Benzene Waste NESHAP.	a.	Complied with requirement. This training utilizes a computer based training (CBT) course and is consistent with the standard operating procedures. Extensive training is conducted for all new Operators at the Refinery prior to their assumption of their operator duty. This Benzene NESHAPS CBT course is a training element in the new Operators training package. See explanations in Paragraph 112b.
BWON	105d for 105a	Effective May 31, 2005 and Annually thereafter	May 31, 2005 and Ongoing	CITGO shall assure that the employees of any contractors hired to perform any of the requirements of Section V.L of this Consent Decree (i.e., Benzene Waste NESHAP Program Enhancements) are properly trained to implement such requirements that they are hired to perform, as under Paragraph 105.a and b above.	a.	Complied with requirement. See explanation on training in Paragraph 112b.
BWON	105d for 105b	Effective January 31, 2006 (New - Force Majeure) December 31, 2005 (Old)	January 31, 2006 and Ongoing	CITGO shall assure that the employees of any contractors hired to perform any of the requirements of Section V.L of this Consent Decree (i.e., Benzene Waste NESHAP Program Enhancements) are properly trained to implement such requirements that they are hired to perform, as under Paragraph 105.b above. Shall complete an initial training program regarding these procedures for all contract personnel assigned to applicable control devices and treatment processes.	a.	Complied with this requirement. See explanation on training in Paragraph 112b.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
BWON	105d for 105b	Effective January 31, 2006 (New - Force Majeure) December 31, 2005 (Old)	January 31, 2006 and Ongoing	CITGO shall assure that the employees of any contractors hired to perform any of the requirements of Section V.L of this Consent Decree (i.e., Benzene Waste NESHAP Program Enhancements) are properly trained to implement such requirements that they are hired to perform, as under Paragraph 105.b above. Comparable training shall also be provided to any persons who subsequently become contract operators, prior to their assumption of this duty. NOTE: Training to cover standard operating procedures for all control devices and treatment processes used to comply with Benzene Waste NESHAP.	a.	Complied with this requirement. See explanation on training in Paragraph 112b.
BWON	107b.	As required post September 30, 2005	When required post September 30, 2005	If changes in processes, operations, or other factors lead CITGO to conclude that its approved EOL Plan may no longer provide an accurate measure of the Refinery's quarterly benzene quantity in uncontrolled benzene waste streams, CITGO shall submit a revised EOL Plan to EPA for approval.	a. & d.	Complied with requirement. Pursuant to Paragraph 107a., an EOL Plan was submitted prior to September 30, 2005. Although the EPA has not approved the initial EOL Plan, the Refinery is continually reviewing and updating the EOL Plan as necessary. A revised EOL plan is not being submitted with this semi-annual report.
BWON	107c.	To be initiated in 4th Quarter 2005	Initiated in October 2005 and Ongoing	Shall commence sampling under its EOL Plan (regardless of whether or not the Plan is approved at that time). CITGO shall take, and have analyzed, at least three representative samples from each identified sampling location. CITGO shall use the average of all samples taken and the identified flow calculations to determine its quarterly benzene quantity in uncontrolled waste streams and to estimate a calendar year value for each Refinery.	a.	Complied with requirement with the exception of samples not caught during unsafe conditions and / or sample availability.

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BWON	109	To be initiated in 4th Quarter 2005	Initiated in October 2005 and Ongoing	For the 6 BQ Compliance Option, shall calculate a quarterly uncontrolled benzene quantity and shall estimate a projected calendar year uncontrolled benzene quantity based on the quarterly EOL sampling results, non-EOL sampling results, and the approved flow calculations. Shall submit the uncontrolled benzene quantity calculations in the progress reports due under Section IX (Paragraph 144) of this Decree.	a. & e.	Complied with requirement. See **Attachment 8** for calculation details.
BWON	110a	Effective January 26, 2005	January 26, 2005 and Ongoing	If the calculations in Paragraph 109 indicate that the quarterly uncontrolled benzene quantity exceeds 1.5 Megagrams or the projected calendar year uncontrolled benzene quantity exceeds 6.0 Megagrams, CITGO shall submit a written report that evaluates all relevant information and identifies whether any action should be taken to reduce benzene quantities in its waste streams for the remainder of the calendar year. If additional actions are determined to be necessary to ensure compliance with the 6 BQ Compliance Option, CITGO will include in its written report a plan as specified in Paragraph 110.b	a.	Complied with requirement. Quarterly BQ and projected 6BQ were not exceeded.
BWON	110b	Effective January 26, 2005	January 26, 2005 and Ongoing	CITGO shall prepare and submit no later than 60 days after the end of the Calendar Quarter, a corrective measures plan.	a.	Not applicable this reporting period.
BWON	110c	Effective January 26, 2005	January 26, 2005 and Ongoing	After a second consecutive quarter in which at least one of the conditions in Paragraph 110.a continues to exist, CITGO shall retain a third-party contractor to undertake a comprehensive study and compliance review.	a.	Not applicable this reporting period.
BWON	111a	Effective January 26, 2005	January 26, 2005 and Ongoing	Conduct monthly visual inspections of and, if appropriate, refill all Subpart FF water traps within individual drain systems.	a.	Complied with requirement.

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BWON	111b	Effective February 28, 2005	February 28, 2005 and Ongoing	Identify and mark at the drain all area drains that are segregated stormwater drains by no later than February 28, 2005.	a.	Complied with requirement.
BWON	111c	Effective January 26, 2005	N/A	If conservation vents are used, visually inspect all Subpart FF conservation vents or indicators on process sewers for detectable leaks on a weekly basis, reset any vents where leaks are detected, and record the results of the inspections.	a.	The Refinery is currently not aware of any use of conservation vents in the BWON Program.
BWON	111d	Effective January 26, 2005	January 26, 2005 and Ongoing	Conduct quarterly monitoring and repair of the oil-water separators consistent with the "no detectable emissions" provision in 40 CFR 61.347.	a.	Complied with this requirement.
BWON	112a	Effective September 30, 2005	Semi-Annually	Submit to EPA information in the progress report(s) pursuant to Paragraph 144 for the six month period covered by the report: a. An identification of all laboratory audits, if any, completed during the six month period, including a description of the methods used in the audit and the results of the audit.	a. & e.	Complied with requirement. No audit conducted this reporting period.
BWON	112b	Effective May 31, 2005 (See Paragraph 105a) Effective Semi-annually after May 31, 2005 (see Paragraph 105a)	Semi-Annually	Submit to EPA information in the progress report(s) pursuant to Paragraph 144 for the six month period covered by the report: A description of the measures taken, if any, during the six month period to comply with the training provisions of Paragraph 105. Paragraph 105a states: Provide annual (i.e., once each calendar year) training for all employees who draw benzene waste samples for Benzene Waste NESHAP purposes.	a. & e.	Complied with requirement. See **Attachment 9** for a description of the measures taken during this six month period.

Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
BWON	112b	Effective January 31, 2006 (New) December 31, 2005 (Old) (See Paragraph 105b) Effective Semi-annually after January 31, 2006 (see Paragraph 105b)	Semi-Annually	Submit to EPA information in the progress report(s) pursuant to Paragraph 144 for the six month period covered by the report: A description of the measures taken, if any, during the six month period to comply with the training provisions of Paragraph 105. Paragraph 105b states: Shall complete an initial training program on the standard operating procedures for all control devices and treatment processes used to comply with the Benzene Waste NESHAP for all operators assigned to applicable control devices and treatment processes. Comparable training shall also be provided to any persons who subsequently become operators, prior to their assumption of this duty.	a. & e.	Complied with requirement. See **Attachment 9** for a description of the measures taken during this six month period.
BWON	112b	Effective January 31, 2006 (New) December 31, 2005 (Old) (See Paragraph 105d) Effective Semi-annually after January 31, 2006 (see Paragraph 105d)	Semi-Annually	Submit to EPA information in the progress report(s) pursuant to Paragraph 144 for the six month period covered by the report: A description of the measures taken, if any, during the six month period to comply with the training provisions of Paragraph 105. Paragraph 105d states: CITGO shall assure that the employees of any contractors hired to perform any of the requirements of Section V.L of this Consent Decree (i.e., Benzene Waste NESHAP Program Enhancements) are properly trained to implement such requirements that they are hired to perform, as under Paragraph 105.a and b above.	a. & e.	Complied with requirement. See **Attachment 9** for a description of the measures taken during this six month period.
BWON	112c	Effective Semi-annually after the 4th Quarter of 2005 (See Paragraph 107(c))	Semi-Annually	Submit to EPA information in the progress report(s) pursuant to Paragraph 144 for the six month period covered by the report: A summary of the sampling results required under Paragraph 107, including the quarterly and projected annual uncontrolled benzene quantities.	a. & e.	Complied with requirement. See **Attachment 8** for summary of sampling results and quarterly and projected annual uncontrolled benzene quantities.

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LDAR	115	Effective April 30, 2005	April 30, 2005 and Ongoing	Develop and maintain a written LDAR Program with the following elements: Refinery leak rate goal and process unit-by-unit target for achievement; Procedure to identify all equipment in light liquid and gas/vapor service that has potential to leak VOCs, HAPS, VHAPs, and benzene; Procedures for identifying leaking equipment; Procedures for repairing and keeping track of leaking equipment; Procedures for identifying and including new equipment; Process for evaluating new equipment to promote equipment to minimize leaks; Definition of LDAR personnel and designation of LDAR Coordinator; and Procedure for communicating LDAR information to personnel. Shall update the program as may be necessary to ensure continuing compliance.	a.	Complied with requirements.
LDAR	116a	Effective May 31, 2005	May 31, 2005 and Ongoing	For personnel newly-assigned to LDAR responsibilities, shall require training prior to each employee beginning such work.	a.	Complied with requirement.
LDAR	116b	Effective Annually starting in 2006	Starting in 2006 and annually thereafter	For all personnel assigned LDAR responsibilities, shall provide and require completion of annual LDAR training.	a. & d.	Complied with requirement. The Lake Charles Refinery interprets annual training to mean that LDAR training must be completed between January 1 and December 31 of each year.
LDAR	116c	Effective Annually starting in 2006	Starting in 2006 and annually thereafter	For all other operations and maintenance personnel (including contract personnel), shall provide and require completion of annual "Refresher" training that includes instruction on aspects of LDAR that are relevant to the person's duties.	a. & d.	Complied with requirement. The Lake Charles Refinery interprets annual training to mean that LDAR training must be completed between January 1 and December 31 of each year.

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LDAR	116d for 116a	Effective May 31, 2005	May 31, 2005 and Ongoing	For contract employees performing LDAR work, shall assure that contractor complies with Subparagraph 116.a by requiring contractor to provide training for personnel newly assigned to LDAR responsibilities. Training to be completed prior to beginning such work. Contractor shall provide its training information and records to CITGO.	a.	Complied with requirement.
LDAR	116d for 116b	Effective Annually starting in 2006	Starting in 2006 and annually thereafter	For contract employees performing LDAR work, shall assure that contractor complies with the training requirements in Subparagraphs 116.b by requiring contractor to provide annual training for all personnel assigned LDAR responsibilities. Contractor shall provide its training information and records to CITGO.	a. & d.	Complied with requirement. The Lake Charles Refinery interprets annual training to mean that LDAR training must be completed between January 1 and December 31 of each year.
LDAR	116d for 116c	Effective Annually starting in 2006	Starting in 2006 and annually thereafter	For contract employees performing LDAR work, shall assure that contractor complies with the training requirements in Subparagraphs 116.c by requiring contractor to provide annual 'refresher" training for all other contract operations and maintenance personnel that includes instruction on aspects of LDAR that are relevant to the person's duties. Contractor shall provide its training information and records to CITGO.	a. & d.	Complied with requirement. The Lake Charles Refinery interprets annual training to mean that LDAR training must be completed between January 1 and December 31 of each year.
LDAR	117 and 219	Initial Audit September 30, 2005 and within 90 days of completion of initial audit	Initial Audit September 30, 2005 and Ongoing post June 30, 2006 (Self-imposed audit finding completion date for component inclusion in LDAR program)	Paragraph 219: For inclusion of all existing equipment in the Refinery's LDAR program.	a., d., & e.	Complied with the requirement except as shown below: During this reporting period, there were 11 light liquid / gas valves that were not monitored within ninety (90) days of being put into service or back into service.

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LDAR	117b	Effective September 30, 2009	Starting in 2009 and every four years thereafter.	Paragraph 117b: Third Party Audits every four years.	a.	No audit was required during this reporting period.
LDAR	117c	Effective September 30, 2007	July 26, 2007 and every four years thereafter	CITGO shall conduct internal audits by sending personnel familiar with the LDAR program and its requirements from one or more of CITGO's other Refineries or locations to audit another CITGO Refinery. CITGO shall complete the first round of these internal LDAR audits no later than two (2) years after the date of the completion of the Initial Compliance Audit required in Subparagraph 117.a. Internal audits of the Lake Charles Refinery shall be held every four years thereafter.	a.	Complied with requirement. Lake Charles Refinery uses third party contractors for all internal audits. See Paragraph 117e below for additional details.
LDAR	117d	Effective September 30, 2007	July 26, 2007 and on-going	To ensure that an audit at each covered Refinery occurs at least every two years, third-party and internal audits shall be separated by no more than two years.	a.	Complied with requirement.
LDAR	117e	Effective September 30, 2007	July 26, 2007 and on-going	As an alternative to the internal audits required by Subparagraph 117.c, CITGO may elect to retain third-parties to undertake these audits, provided that an audit of each Covered Refinery occurs every two (2) years.	a.	Third party audit conducted in first half 2011.
LDAR	118	Ongoing after November 29, 2005	November 29, 2005 and Ongoing	If the results of any of the audits conducted pursuant to Paragraph 117 identify any areas of noncompliance, CITGO shall implement, as soon as practicable, all steps necessary to correct or otherwise address such area(s) of non-compliance and to prevent a recurrence of the cause of that non-compliance, to the extent practicable.	a.	Complied with requirement.

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LDAR	118	Ongoing after November 29, 2005	November 29, 2005 and Ongoing	For the life of the Consent Decree, CITGO shall retain the audit reports generated pursuant to Paragraph 117 and shall maintain a written record of all corrective actions that CITGO takes in response to deficiencies identified in any audits.	a.	Complied with requirement.
LDAR	118	Effective September 30, 2007	July 26, 2007	In the first semi-annual report after the completion of an audit, see Section IX of this Consent Decree (Recordkeeping and Reporting), CITGO shall submit a summary, including findings, of each such audit report and a list of corrective actions taken during the reporting period.	a. & d.	Complied with requirement. No Audit was conducted during this reporting period. There are no outstanding corrective actions.
LDAR	118	Initially in semi-annual report post January 1, 2006 and semi-annually thereafter	August 31, 2006 and semi-annually thereafter	In each subsequent semi-annual report, CITGO shall submit a list of corrective actions taken during that reporting period and a notice, where appropriate, that all corrective actions have been completed in response to a particular audit at the Lake Charles Refinery.	a.	Complied with requirement. No Audit was conducted during this reporting period. There are no outstanding corrective actions.
LDAR	119a	Effective February 28, 2006	February 28, 2006 and Ongoing	Shall utilize an internal leak definition of 500 ppm VOCs for valves excluding pressure relief devices in light liquid and/or gas/vapor service, unless other permit(s), regulations, or laws require the use of lower leak definitions.	a.	Complied with requirement.
LDAR	119b	Effective February 28, 2006	February 28, 2006 and Ongoing	Shall utilize the internal leak definition of 2000 ppm for pumps in light liquid and/or gas/vapor service, unless other permit(s), regulations, or laws require the use of lower leak definitions.	a.	Complied with requirement.

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LDAR	120a	Effective February 28, 2006	February 28, 2006 and Ongoing	For regulatory reporting purposes, CITGO may continue to report leak rates in valves and pumps against the applicable regulatory leak definition, or may use the lower, internal leak definitions specified in Paragraph 119.	a.	Complied with requirement. The Lake Charles Refinery is using the applicable regulatory leak definition for reporting purposes.
LDAR	120b	Effective February 28, 2006	February 28, 2006 and Ongoing	Shall begin recording, tracking, repairing and re-monitoring all leaks in excess of the internal leak definitions of Paragraph 119.	a. & d.	Complied with requirement except as noted in Paragraph 130.b.ix. below.
LDAR	120b	Effective February 28, 2006	February 28, 2006 and Ongoing	Shall make a first attempt to repair and re-monitor leaks within five (5) days of identification.	a. & d.	Complied with requirement except as noted in Paragraph 130.b.ix. below.
LDAR	120b	Effective February 28, 2006	February 28, 2006 and Ongoing	Within thirty (30) days of leak identification, shall either complete repairs and re-monitoring of leaks or place such component on the Refinery's delay of repair list pursuant to Paragraph 128.	a. & d.	Complied with requirement except as noted in Paragraphs 128 and or 130b.ix. below.
LDAR	121a	Effective February 28, 2006	February 28, 2006 and Ongoing	Unless more frequent monitoring is required by applicable federal, state and/or local requirements, shall monitor all pumps at Refinery at the internal leak definition on a monthly basis.	a. & d.	Complied with requirement except as noted in Paragraphs 128 and or 130b.ix. below.
LDAR	121b	Effective February 28, 2006	February 28, 2006 and Ongoing	Unless more frequent monitoring is required by applicable federal, state and/or local requirements, shall monitor all valves at Refinery, other than difficult-to-monitor or unsafe-to-monitor valves, at the internal leak definition on a quarterly basis.	a. & d.	Complied with requirement except as noted in Paragraphs 128 and or 130b.ix. below.
LDAR	123a	Effective January 26, 2005	January 26, 2005 and Ongoing	Continue to maintain an electronic database for storing and reporting LDAR data.	a.	Complied with requirement.
LDAR	123b	Effective December 31, 2004	December 31, 2004 and Ongoing	Use data loggers and/or other electronic data collection devices during all LDAR monitoring and use best efforts to transfer data daily. Some use of paper logs is allowed provided manually recorded monitoring data is transferred to the electronic data base within 7 days of the monitoring event.	a.	Complied with requirement except as noted below; 85 components were not transfered to electronic database within 7 days of monitoring event. Note: 3 components in March, 67 components in May, and 15 components in June.

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LDAR	124 Subparag. a.	Effective January 26, 2005	January 26, 2005 and Ongoing	Shall have developed and begun implementing procedures for quality assurance/quality control ("QA/QC") reviews of all data generated by LDAR monitoring technicians such that monitoring data is reviewed for QA/QC by the monitoring technicians daily after collection.	a.	Complied with requirement.
LDAR	124 Subparag. b.	Effective January 26, 2005	Quarterly January 26, 2005 and Ongoing	Shall have developed and begun implementing procedures for quality assurance/quality control ("QA/QC") reviews of all data generated by LDAR monitoring technicians such that all monitoring data is subject to a QA/QC review at least once per quarter, including but not limited to the number of components monitored per technician, time between monitoring events, and abnormal data patterns.	a.	Complied with requirement.
LDAR	127a	Effective January 26, 2005	January 26, 2005 and Ongoing	Conduct calibrations of LDAR monitoring equipment in accordance with EPA Reference Test Method 21.	a.	Complied with requirement.
LDAR	127b	Effective January 26, 2005	January 26, 2005 and Ongoing	Shall conduct calibration drift assessments of LDAR monitoring equipment at the end of each monitoring shift, at a minimum. If any calibration drift assessment after the initial calibration shows a negative drift of more than 10% from the previous calibration, shall re-monitor all valves that were monitored using that instrument and that had a reading greater than 100 ppm since its last calibration and shall re-monitor all pumps that were monitored using that instrument and that had a reading greater than 500 ppm since its last calibration.	a.	Complied with requirement.
LDAR	127c	Effective January 26, 2005	January 26, 2005 and Ongoing	Maintain LDAR instrument calibration records for one year.	a.	Complied with requirement.

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LDAR	128a	Effective February 28, 2006	February 28, 2006 and Ongoing	CITGO shall take the following actions for any equipment at the Refinery that CITGO intends to place on the "delay of repair" list, under applicable regulations: a. Require sign-off by the unit supervisor (as identified in the Covered Refinery's written LDAR program) within thirty (30) days of identifying that a piece of equipment is leaking at a rate greater than the applicable leak definition that such equipment is technically infeasible to repair without a process unit shutdown.	a. & d.	Complied with requirement.
LDAR	128b	Effective February 28, 2006	February 28, 2006 and Ongoing	Shall take the following actions for any equipment at the Refinery that CITGO intends to place on the "delay of repair" list, under applicable regulations: b. Include equipment that is placed on the "delay of repair" list in CITGO's regular LDAR monitoring, as required in Paragraph 121.	a. & d.	Complied with requirement. All equipment on the DOR list that is in service was monitored during the reporting period. Those pumps and valves that are on the DOR list that are out-of-service (i.e., isolated and drained) are not being routinely monitored.
LDAR	128c	Effective February 28, 2006	February 28, 2006 and Ongoing	Shall take the following actions for any equipment at the Refinery that CITGO intends to place on the "delay of repair" list, under applicable regulations: c. Use the "drill and tap" method (or an equivalent), other than on a control or pressure relief valve, if it is leaking at a rate of 10,000 ppm or greater, unless CITGO can demonstrate that there is a safety, mechanical, or major environmental concern posed by repairing the leak in this manner. CITGO shall, if necessary, perform two "drill and taps" (or equivalents) within thirty (30) days of detecting the leak. For purposes of this Paragraph, the second attempt may be made through the same hole created during the first attempt.	a.	Complied with requirement.

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LDAR	128d	Effective February 28, 2006	February 28, 2006 and Ongoing	Shall take the following actions for any equipment at the Refinery that CITGO intends to place on the "delay of repair" list, under applicable regulations: d. Use best efforts to isolate and repair pumps identified as leaking at a rate of 2000 ppm or greater.	a.	Complied with requirement.
LDAR	128e	Effective February 28, 2006	February 28, 2006 and Ongoing	Shall take the following actions for any equipment at the Refinery that CITGO intends to place on the "delay of repair" list, under applicable regulations: e. If a new method develops that is similarly effective as the "drill and tap" method for repairing non-control valves, CITGO will advise EPA and the LDEQ prior to implementing such new method.	a.	No new methods developed during reporting period.
LDAR	129	Effective January 26, 2005	January 26, 2005 and Ongoing	Shall replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after identification. A component shall be classified as a "chronic leaker" under this Paragraph if it leaks above 10,000 ppm twice in any consecutive four quarters, unless the component has not leaked in the twelve (12) consecutive quarters prior to the relevant process unit turnaround.	a. & d.	Complied with requirement. See **Attachment 10** for clarification of the CITGO's understanding of the Chronic Leaker requirements.
LDAR	130b.i. Thru 130.b.vi.	Each Semi-Annual Progress Report	Starting in 2005 and semi-annually thereafter	In each Semi-Annual Progress Report, shall also include the following information: a list of the process units monitored during the reporting period; the number of valves and pumps present in each process unit; the number of valves and pumps monitored in each process unit; the number of valves and pumps found leaking; the number of "difficult to monitor" pieces of equipment monitored; and the projected month and year of the next monitoring event for that unit.	a. & e.	Complied with requirement. See **Attachment 11** for requested information.

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LDAR	130.b.vii	Each Semi-Annual Progress Report after February 28, 2006 [August 31, 2006]	Starting in 2005 and semi-annually thereafter	In each Semi-Annual Progress Report, shall also include the following information: a list of all equipment currently on the "delay of repair" list, the date each component was determined to be leaking at a rate greater than 10,000 ppm, the date of each drill and tap or equivalent method of repair, its associated monitoring results, and whether such activities were completed in a timely manner under Paragraph 128.	a. & e.	Complied with requirement. See **Attachment 12** for report on requested information.
LDAR	130.b.viii	Each Semi-Annual Progress Report after September 30, 2005	Starting in 2005 and semi-annually thereafter	In each Semi-Annual Progress Report, shall also include the following information: the number, date and results of each initial attempt at repair, including a list of all initial attempts/remonitoring that did not occur in a timely manner under Paragraph 122.	a., d. & e.	As reported in previous semi-annual reports, reporting on initial attempts at 200 ppm pursuant to Paragraphs 122 and 130.b.viii. will not be required for the Lake Charles Refinery.
LDAR	130b.ix.	Each Semi-Annual Progress Report after February 28, 2006	Starting in 2005 and semi-annually thereafter	In each Semi-Annual Progress Report, shall also include the following information: all instances when CITGO failed to comply with the requirements in Paragraph 120.b. (Recording, Tracking, Repairing and Remonitoring Leaks).	a., d. & e.	Complied with requirements.
Permitting (General Requirement)	132	Varies	As Applicable	Within thirty (30) days after the effective date or establishment of any emission limits and/or standards under Section V of this Consent Decree, shall submit applications to the LDEQ to incorporate those emission limitations and/or standards into air permits (other than Title V permits) which are federally enforceable unless such permits with such limits have already been issued or applied for. Shall file any applications necessary to incorporate the requirements of those permits into the Title V permits of the Refinery.	a.	Complied with requirement.

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Consent Decree Topic	Paragraph Reference	Due Date	Submittal / Completion Date	Requirement Description	¶ 144 Reporting (a. - e.)	Comments
Recordkeeping and Reporting	144b	Each Semi-Annual Report	Semi-Annually	Submit a summary of the emissions data, including a separate identification of any exceedence(s), for each Covered Refinery as required by Section V of this Consent Decree for the six (6) month period covered by the report.	b.	Emission exceedences are detailed in the above comments. Emission summary data is presented in **Attachment 13**.
Recordkeeping and Reporting	144c	Each Semi-Annual Report	Semi-Annually	Submit a description of any problems anticipated with respect to meeting the requirements of Section V. of this Consent Decree.	c.	No problems anticipated with meeting requirements.
Recordkeeping and Reporting	144d	Each Semi-Annual Report	Semi-Annually	Discuss any such additional matters as CITGO believes should be brought to the attention of the EPA and LDEQ.	d.	**Attachment 14** contains additional information for EPA and LDEQ review.

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ATTACHMENT 1

Testing of FCCU Regenerators for PM

Background

The Lake Charles Refinery uses Wet Gas Scrubbers (WGS) to control PM emissions on the three Fluid Catalytic Cracking Units (FCCUs).

Consent Decree Requirements

In summary, Paragraph 47 states that CITGO:

- Shall follow the stack test protocol specified in 40 C.F.R. § 60.106(b)(2) using EPA Reference Method 5B to measure PM emissions from the FCCUs with WGSs;.
- Shall propose and submit the stack test protocol for approval to EPA;
- Shall conduct the first stack test no later than three (3) months after EPA approves the stack test protocol;
- Shall conduct annual PM stack tests at each FCCU, until termination of the Consent Decree;
- Upon demonstration through at least three (3) annual tests that the PM limits are not being exceeded, may request EPA approval to conduct tests less frequently than annually at that FCCU.

Refinery MACT II Requirements

CITGO's Lake Charles Refinery has "affected catalytic cracking facilities" pursuant to 40 CFR Part 63, Subpart UUU (i.e., Refinery MACT II). Refinery MACT II contains provisions for emissions standards, operating limits, notifications, recordkeeping, monitoring, and performance tests for FCCUs. CITGO operates three FCCUs (FCCU-A, FCCU-B and FCCU-C) that are subject to these Refinery MACT II Provisions. The MACT II Compliance Date for FCCUs was April 11, 2005.

On April 2, 2004, the Lake Charles Refinery requested a one year compliance date extension to the 40 CFR Part 63, Subpart UUU PM requirements from the Louisiana Department of Environmental Quality (LDEQ). The extension was requested due to the inability of the FCCU electrostatic precipitators to consistently reduce PM (including Nickel) low enough to meet the standard. The Refinery needed time to install a Wet Gas Scrubber (WGS) on each of the FCCUs. The LDEQ granted the one year extension on April 22, 2004.

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CITGO's Plan to Achieve Compliance

CITGO completed construction of the three WGSs prior to the April 11, 2006 extension deadline. On March 27, 2006, CITGO submitted a notification of intent to conduct a performance test for PM on the three WGSs in accordance with 40 CFR 63.1574(a)(2). The notification was submitted to the LDEQ (Mr. Jay Carney) with a copy to Mr. Jon York at EPA Region VI. The notification contained a stack sampling plan (protocol) using Method 5B to measure PM and supported CITGO's October 27, 2004 Opacity AMP application for the WGS PM control devices.

As a result of subsequent conversations with Mr. Carney and Mr. York, the stack sampling protocol was revised and resubmitted on June 26, 2006 for approval. CITGO received a verbal approval from both agencies prior to the start of the July 2006 stack tests. The stack tests took place on July 10 and 11, 2006 for FCCU-A, July 12 and 13, 2006 for FCCU-B and July 17 and 18, 2006 for FCCU-C. Results of the stack tests were submitted to the EPA and LDEQ on August 11, 2006. On March 4, 2009, Cynthia Kaleri (EPA Region VI) notified CITGO that the parameters chosen for compliance were incomplete. CITGO and EPA met by phone on June 30, 2009 to discuss the issues.

On July 17, 2009, CITGO submitted a detailed description of the method in which Liquid to Gas Ratio and delta P across the BELCO scrubbers were to be calculated. In a letter dated August 19, 2009, EPA granted conditional approval of the original alternate monitoring plan (AMP) and specified that CITGO must conduct a performance test to establish operating parameter limits (OPLs) for Mimimum Liquid to Gas ratio (L/G), Minimum quench section water pressure (P_L), and Minimum pressure drop across the AFM/Cyclolabs section of the scrubber (delta P_c).

CITGO conducted performance testing of the FCCU scrubbers during the week of August 3 - 7, 2009. Performance testing was performed at representative FCC unit operating rates with scrubber parameters adjusted to provide worse case performance. Performance testing demonstrated compliance with the particulate matter (PM) emission standards and established a lower limit for the OPLs. On October 29, 2009, CITGO submitted the PM test results and OPLs to the EPA.

In a letter dated June 18, 2012, EPA granted approval of the CITGO alternative monitoring plan.

CITGO will continue to conduct PM stack tests in accordance with Paragraph 47.

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ATTACHMENT 2

CO Emission Limits for FCCU Regenerators

Paragraphs 48 and 51 are silent regarding the applicability of the 1-hour average CO limits (i.e., 500 ppmvd CO corrected to 0% O_2 in Paragraph 48 and 500 ppm CO in Paragraph 51 pursuant to 40 CFR 60.105(e)(2)) during Startup, Shutdown and Malfunction events.

Based on discussions with EPA's CITGO Consent Decree Coordinator, John L. Jones, and subsequent Consent Decrees issued to other refining companies, the following clarifications regarding Startup, Shutdown and Malfunction have been accepted and are applicable to CITGO's Consent Decree:

Startup, Shutdown, and Malfunction. CO emissions (i) caused by or attributable to the Startup, Shutdown, or Malfunction of a Covered FCCU and/or (ii) during periods of Malfunction of the relevant FCCU's CO control system will not be used in determining compliance with any short-term (i.e., 1-hour) CO emission limit established pursuant to Paragraph 48 or 51, provided that during such periods CITGO implements good air pollution control practices to minimize CO emissions. Nothing in this Paragraph shall be construed to relieve CITGO of any obligation under any federal, state, or local law, regulation, or permit to report emissions during periods of startup, shutdown, or Malfunction, or to document the occurrence and/or cause of a startup, shutdown, or Malfunction event.

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ATTACHMENT 3

Request for Alternative Monitoring Plan
Back-up Calculations Method for SO_2 Emissions

Sulfuric Acid Plant

On December 31, 2006, CITGO's Lake Charles Refinery Sulfuric Acid Plant (Acid Plant) became an "affected facility" as that term is used in 40 C.F.R. Part 60, Subparts A and H (NSPS for Sulfuric Acid Plants). Pursuant to Paragraph 72 of the NSR Consent Decree, the Refinery's Sulfuric Acid Plant is to comply with Subparts A and H and the emission limitation of 3.5 pounds of sulfur dioxide per ton of acid produced, three hour rolling average, (production expressed as 100 percent sulfuric acid).

Subpart H requires continuous emissions monitoring for Sulfur Dioxide (SO_2) in the stack and in 40 CFR 60.84(b), the Refinery is required to determine the SO_2 concentration entering the converter by use of "suitable methods". The Reich test (a wet chemical method) is listed as an example of a suitable method. The Refinery is using an SO_2 process analyzer on the inlet to the converter as a suitable method to calculate the conversion factor in 40 CFR 60.84(b). To address the times when there are no valid readings available from the SO_2 process analyzer during any block calendar eight hour periods, the Refinery, on September 28, 2006, submitted a request for an alternative monitoring plan (AMP) for a backup calculation method for SO_2 emissions from the Sulfuric Acid Plant. The method proposed is a mass balance method which provides emissions consistent with the performance test method calculation provided in 40 CFR 60.85.

On December 20, 2006, a telephone conference call was conducted between the U.S. EPA Region VI (John L. Jones and Jonathan York) and CITGO personnel on the status of the review of the AMP request. The EPA requested 30 days of data be submitted after the process analyzer was installed and operational. The purpose of the data was to show the suitable correlation between the Subpart H calculation ("EPA calculation") and the AMP back-up calculation for SO_2 emissions as a function of a ton of 100% sulfuric acid produced.

On April 25, 2007, CITGO submitted the Revised Request for Alternative Monitoring Plan Back-up Calculation Method – SO_2 and Submittal of Data in Support of the Request.

The requested emissions calculations were based on data that was gathered from February 7 through April 7, 2007. CITGO performed an analysis on valid data that

properly excludes known periods of analyzer calibrations, analyzer maintenance, analyzer malfunctions and unit shutdowns. The new SO_2 process analyzer was successfully placed into service on December 29, 2006. During the first two months of service, the analyzer experienced a myriad of sampling issues due to a minor design problem with the sampling system. By February 19, 2007, after sampling system adjustments, the analyzer and sampling system began to consistently operate as intended.

A comparison of the results of the two calculation methods shows that the AMP back-up calculation is conservative, and at the compliance levels of 3.5 and 4.0 lbs of SO_2 per ton of 100% sulfuric acid produced, the AMP back-up calculation estimates emissions approximately 0.5 to 0.6 lbs of SO_2 higher than the EPA calculation. CITGO performed a linear regression on these results and developed an equation that is proposed for use in predicting SO_2 emissions during outages of the SO_2 process analyzer.

With the use of the SO_2 process analyzer and the conservative AMP back-up calculations, the Refinery is able to calculate minute by minute SO_2 emissions and then update the information every hour to determine a rolling three hour average. The ability to calculate minute by minute emissions is far superior to a wet chemistry test run every eight hours (i.e., the Reich test). With the AMP backup calculated SO_2 emissions being very conservative relative to the emissions determined by the SO_2 process analyzer, the Refinery believes that the use of the AMP back-up calculation method and the linear relationship between the two methods is an acceptable means to predict emissions during outages of the SO_2 process analyzer.

CITGO is awaiting approval of the AMP and is not using the AMP as a back-up calculation method for SO_2 emissions from the CITGO Lake Charles Refinery Sulfuric Acid Plant.

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ATTACHMENT 4

PMO Plan Compliance

Pursuant to Paragraph 73a., the Lake Charles Refinery has developed and implemented a Preventive Maintenance and Operation Plan (PMO Plan) for enhanced maintenance and operation of their SRPs, the Sulfuric Acid Plant and the appropriate Upstream Process Units.

The PMO Plan is a compilation of the Refinery's approaches for exercising good air pollution control practices and for minimizing SO_2 emissions from sulfur processing and other production processes at the Refinery. The PMO Plan has as its goals the elimination of Acid Gas Flaring and operation of SRPs between Scheduled Maintenance turnarounds with minimization of emissions. The PMO Plan includes, but is not limited to, sulfur shedding procedures, startup and shutdown procedures for the Sulfur Recovery Plant (SRP), control devices and Upstream Process Units, emergency procedures and schedules to coordinate maintenance turnarounds of the SRP Claus trains and any control device to coincide with scheduled turnarounds of major Upstream Process Units. CITGO shall implement the PMO Plans at all times, including periods of Startup, Shutdown and Malfunction of its SRPs. Changes to a PMO Plan related to minimizing Acid Gas Flaring and/or SO_2 emissions shall be summarized and reported by CITGO to EPA and the appropriate Co-Plaintiff in the semi-annual report required under Paragraph 144.

During this reporting period the following changes were made to the PMO plan;

- Procedure references in the PMO Appendices were updated to reflect the addition and consolidation of existing unit procedures.
- Unit Supervisor references were changed.
- Stack match install status was updated.
- Reference Section E to include the use of an IntelaTrac data gathering system.

Preventative Maintenance and Operation Plan ("PMO Plan")
For
Sulfur Recovery Handling Units

CITGO Petroleum Corporation
Lake Charles Manufacturing Complex
P.O. Box 1562
Lake Charles, La,70602
337-708-6011

Revision

July 1, 2012

Purpose of Plan

The purpose of this plan as required under Paragraph 73 of the New Source Review (NSR) Consent Decree between the CITGO Petroleum Corporation, the U.S. Environmental Protection Agency, the U.S. Department of Justice, and the Louisiana Department of Environmental Quality is to summarize the steps to be taken at the CITGO Petroleum Corporation (CITGO) Lake Charles Manufacturing Complex (LCMC) Sulfur Recovery Units, Tail Gas Cleanup Units, Sulfuric Acid Unit and appropriate upstream processing units, herein referred to as the Sulfur Recovery Handling Units (SRHU), to maintain and improve air pollution control practices and to minimize sulfur dioxide emissions from sulfur processing and other production processes at LCMC.

The Preventative Maintenance and Operation Plan (PMO Plan) for enhanced maintenance and operation was prepared to document the existing safeguards in place and to improve operation and reliability enhancements at the SRHU to minimize sulfur dioxide (SO_2) emissions at the LCMC. The PMO Plan includes all required procedures and schedules for the SRHU along with documentation of mechanical changes implemented or to be implemented to accomplish the goal of reducing sulfur dioxide emissions from the SRHU.

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SECTION A

LCMC Sulfur Recovery Handling Overview

The LCMC is equipped with four independent Sulfur Recovery Units (SRUs), two parallel Tail Gas Units (Sulften and TGII), and a single Thermal Oxidizer facility. A simplified flow scheme is attached in Appendix A. A small quantity of acid gas can also be processed in the Sulfuric Acid Plant to produce sulfuric acid. Each Tail Gas Unit is equipped with its own closed loop amine system. The feed for the SRU's is both amine acid gas and sour water stripper (SWS) gas. The amine acid gas is produced in two parallel Central Amine (CA) Regeneration Units. Each CA unit train is independent and includes lean and rich amine exchangers, amine degassing drums, and surge tanks. The CA units provide lean amine to the amine contactors through the lean amine header for treatment of hydrogen, refinery fuel gas and liquid propane. The CA units receive rich amine from the amine contactors through the refinery rich amine header. There are a total of twelve amine contactor systems on the refinery amine header, each listed below:

1. Coker II Amine
2. Benzene Amine
3. Fuel Gas Processing Unit (FGPU) E3
4. Fuel Gas Processing Unit (FGPU) E3A
5. Light Ends Recovery Unit (LERU)
6. Ultra Low Sulfur Diesel (ULSD)
7. Girbotol Treating F25A
8. Girbotol Treating F25B
9. A Cat Gasoline Gas Hydrotreater (CGH) Amine
10. B Cat Gasoline Gas Hydrotreater (CGH) Amine
11. Unicracker Hydrogen Amine
12. Crude Vacuum Expansion (CVEP) Vacuum Tower Amine (CV1)

The SWS gas is produced in the three refinery SWS units. The three SWS are A, B, and C SWS. The sour water system collects water from throughout the refinery through three surge drums. It is then processed in the SWS with stripped water going to the waste water treatment facility and crude desalters as make-up water. Stripped sour water can also be sent to the Fluidized Catalytic Cracking Unit (FCCU) wet gas scrubbers. The overhead gas or SWS gas is routed to the SRUs for processing.

SECTION B

Sulfur Shedding Plan

LCMC's SRU Contingency Plan / Environmental Work Instruction is implemented in the event that a planned/unplanned shutdown, emergency shutdown, or malfunction renders any of the SRHU facilities inoperable or not functioning properly (i.e. exceedances of environmental limits may occur). In the Plan, Operations management utilizes the current Process Recommendation list (i.e., H2S Shed List) issued by the Business Optimization Group (BOG) to reduce the quantity of hydrogen sulfide gas being produced and sent to the SRHU facilities in order to achieve compliance. These steps are to be taken as soon as possible to reduce emissions as quickly as practicable.

Shown below is an example, but not an exclusive list, of the units and actions that are typically included in the H2S Shed List. The order and size of the steps to be taken vary depending upon the situation.

Reduce Unicracker feed rate;
Reduce Coker feed rates;
Reduce FCCU feed rates;
Reduce hydrotreater feed rates.

Process data that resulted from a sulfur shed are maintained in the PI data system.

SECTION C

Startup and Shutdown Procedures

The procedures for startup and shutdown of all units included in the SRHU facility are listed within the standard operating procedures section. The current version of these procedures is stored within LCMC's Electronic Document Maintenance System (EDMS) and is available upon request. A list of the standard operating procedures for the Sulfur Recovery Handling units can be found in Appendices B, C, D and E. All procedures are reviewed annually by the responsible Unit Supervisor. If changes are needed, the Unit Supervisor will submit the changes to the Procedure Administrator according to the procedure for procedure changes which involves review and approval steps. The EDMS system allows employees to access the most current version of a procedure directly at any EDMS networked computer within the LCMC.

SECTION D

Emergency Procedures

Emergency procedures have been written to operate and / or shutdown the Sulfur Recovery Handling Units while minimizing SO_2 emissions. All emergency procedures are listed in Appendix F. The current version of these procedures is stored within EDMS and is available upon request. All procedures are reviewed annually by the Unit Supervisor. If changes are needed, the Unit Supervisor will submit the changes to the Procedure Administrator according to the procedure for procedure changes which involves review and approval steps. The EDMS system allows employees to access the most current version of a procedure directly at any EDMS networked computer within the LCMC.

SECTION E

Operator Routine Checks, Preventative/Predictive Maintenance, and Turnarounds

The LCMC is operated 24-hours per day, seven days per week. All units, including the Sulfur Recovery Handling Units, have highly-trained operating personnel assigned around-the-clock. These operators are responsible for monitoring the computer-based instrumentation system, performing routine checks of operating equipment, initiating maintenance work orders, troubleshooting operating problems, starting up and shutting down the units, performing minor maintenance, and handling unusual or emergency situations. They report to Unit Supervisors and an Area Shift Foreman.

Operator Routine Checks and Work Assignments

The minimum job requirements for unit operators are discussed in detail in the JSTGs (Job Skills Training Guides). The individual operators sign off on routine work each shift as it is completed. Operators are also required to complete Unit Logs, which allow written transfer of pertinent unit information to the next shift and other applicable parties. These logs are maintained in EELS (Electronic Event Logbook System). Additional duties are requested through various methods (verbal order, written standing and night orders). Follow up on duty assignment completion is the responsibility of the Unit Supervisors and an Area Shift Foreman.

Equipment Reliability through Vibration Analysis

Routine operational monitoring is performed by unit operators on all in-service rotating equipment as predictive maintenance to identify any mechanical problems before a severe failure occurs. This information is recorded in a data acquisition and handling system (IntelaTrac). The Refinery Rotating Equipment Department's reliability engineers also perform equipment vibration surveys to provide further detailed analysis.

Additionally, the rotating equipment group performs standardized checks of the rotating equipment on a scheduled basis to allow for predictive maintenance repairs, and they write work orders associated with their findings.

Preventive Maintenance

The Maintenance Department performs preventive maintenance on designated pumps and blowers in the Sulfur Recovery Handling Units based on established frequencies. The frequency is based on the criticality and/or type of pumps and blowers, as well as history of failure. Work orders for preventive maintenance are generated automatically by the computerized maintenance management system. The preventive maintenance tasks include oil lubrication change and motor greasing. Additional preventative maintenance tasks are performed based on an as needed basis such as lube oil filter changes and blower filter changes.

Emergency Shutdown System (ESD) Function Testing

Instrumentation for ESD systems is tested for proper operation by CITGO maintenance personnel on established frequencies. The testing is conducted in accordance with a written procedure. Results of instrument testing are maintained.

Internal and External Inspections

Inspections are conducted on pressure vessels, piping, and storage tanks to note indications of recent or potential failures, and to make recommendations for corrective action. The frequency of inspections is in accordance with the applicable American Petroleum Industry (API) code guidelines.

The inspections are performed by personnel certified to the appropriate API guidelines. The inspection reports are filed in a computer database, with hard copies filed by the Inspection Department. The reports are retained for the life of the equipment.

Thickness readings are taken on pressure vessels, piping, and storage tanks to identify areas of metal loss and to assist in determining corrosion rates. The frequency of thickness inspection is in accordance with the applicable API guideline.

The thickness inspections are conducted by qualified inspection personnel. The hard copy results of the thickness readings are filed with the Inspection Department and are retained for the life of the equipment location. Piping, pressure vessel, and storage tank readings are entered into software to determine corrosion rates and inspection intervals.

Turnaround Schedules

It is the practice of LCMC to make every possible attempt to schedule planned turnarounds on the Sulfur Recovery Handling Units so that they coincide with scheduled turnarounds of major upstream process units. This practice is in place to minimize the impact of reduced acid gas and sour water stripper gas processing capacity when one SRU is out of service. SRU turnaround frequency is between 2 and 5 years depending on the unit and the individual unit run limiters. Although the scope of each of these turnarounds varies slightly depending on the condition of the units, minimum work typically includes performing internal inspections/cleaning/repairs of the reactors, burners, heat exchangers, towers, and changing out the catalyst in the SRU and Hydrogenation reactor.

SECTION F

Mechanical Upgrades and Installations

Operational changes and upgrades have been implemented or are planned to be implemented at LCMC to reduce emissions from the Sulfur Recovery Units.

Upgrades and Installations Already in Place

Several equipment upgrades and installations have occurred which have helped improve the overall operation of the LCMC Sulfur Recovery Handling Units. Control valves have been installed on the natural gas feeding all of the SRU re-heaters to aid in startup. In addition, Stackmatch® igniters have been installed on A, C and E SRU's to facilitate low emission startups as well as reducing the time for relights during unit trips (shutdowns). A motorized valve has also been installed to minimize transition time between thermal oxidizer and the tail gas clean up unit (TG-II).

During recent turnarounds of the Sour Water Stripper Units, 2 of the 3 CPI separators were cleaned and modifications were made to the packing orientation. Minor changes were also made to prevent future malfunction of packing, and improve the efficiency of oil/water separation stage. In addition, instrumentation upgrades were made to the oily water separators and surge tanks which would allow more accurate detection of hydrocarbon in the sour water stripper feed. These changes have improved the reliability of the SWSs and minimized potential upsets to the SRUs.

Planned Changes and Upgrades

Along with the changes and upgrades in place, LCMC will be making additional changes to D SRU's during the next turnaround.

1) Sulfur Recovery Units. A project for installing Stackmatch® igniters in D SRU will be completed during the next available opportunity.

SECTION G

Operator Training

Employees receive proper training before being assigned to a new unit. The trainee's capabilities and progress are monitored by the Refinery Training Event Coordinator during the training period. All employees must demonstrate competency to the Unit Supervisor before being released to work the units assigned.

Detailed unit computer based training modules known as CBT's, or Computer Based Training, prepared by the Training Department form the basis of an operator's initial training. This training emphasizes that these are critical pieces of environmental equipment and require a high degree of attention and immediate response to assure compliance. Process Safety Management (PSM) refresher training is conducted every three years covering all unit operating procedures. The operators are informed and trained on any equipment changes, process changes, and/or changes in operating parameters as needed to comply with all federal guidelines as part of the Management Of Change (MOC) process.

Operator initial unit specific training is conducted using JSTG's (Job Skills Training Guide). Recertification of operator qualifications is conducted every three years on all jobs they are currently qualified on by the Unit Supervisor or his/her designee. JSTG's are kept current and are accessible electronically on EDMS or hardcopy via Document Control Dept.

SECTION H

Malfunction Review Procedure

Following each malfunction, excess emissions, activation of the flare, or diverter valve malfunction within the Sulfur Recovery Handling Units, the Chief Operator or Unit Supervisor along with the Area Shift Foreman will initiate a Refinery Incident Report into the IMPACT system, indicating the nature of the incident and the initial probable causes. Initiation of the Refinery Incident Report will trigger an incident investigation and track corrective actions taken. This program was developed to ensure that process incidents, including environmental incidents, are thoroughly investigated and that relevant findings are communicated throughout the LCMC to help prevent a recurrence. With respect to this plan, the incident investigation program establishes a management system to:

- Capture environmental incidents.
- Investigate incidents.
- Identify root and contributing causes.
- Identify and evaluate recommended measures to prevent recurrence and reduce the probability and/or severity of a similar recurrence.
- Ensure timely issuance of incident reports.
- Address and resolve incident recommendations.

Significant malfunction or release events that result in a permit exceedance will be assigned a team to conduct an investigation of the incident. Other malfunctions or upsets not resulting in a permit exceedance may be elevated in priority requiring a team's investigation if deemed necessary. At least one person knowledgeable in the process will be assigned to the investigation team. Other refinery personnel, as deemed necessary, will be called upon to assist in the investigation.

Upon completion of the incident investigation, a report of the investigation is developed and relevant findings are presented. Recommendations are developed and assigned to appropriate personnel for completion to minimize the possibility of a recurrence.

SECTION I

Process Hazard Analysis Evaluations

A Process Hazard Analysis (HAZOP) evaluation is completed at a minimum of every 5 years on systems related to the Sulfur Recovery Handling Units. Any recommendations generated during a HAZOP evaluation are implemented as soon as possible or during the next scheduled maintenance outage for each Sulfur Recovery Handling Unit.

SECTION J

PMO Plan Responsibilities

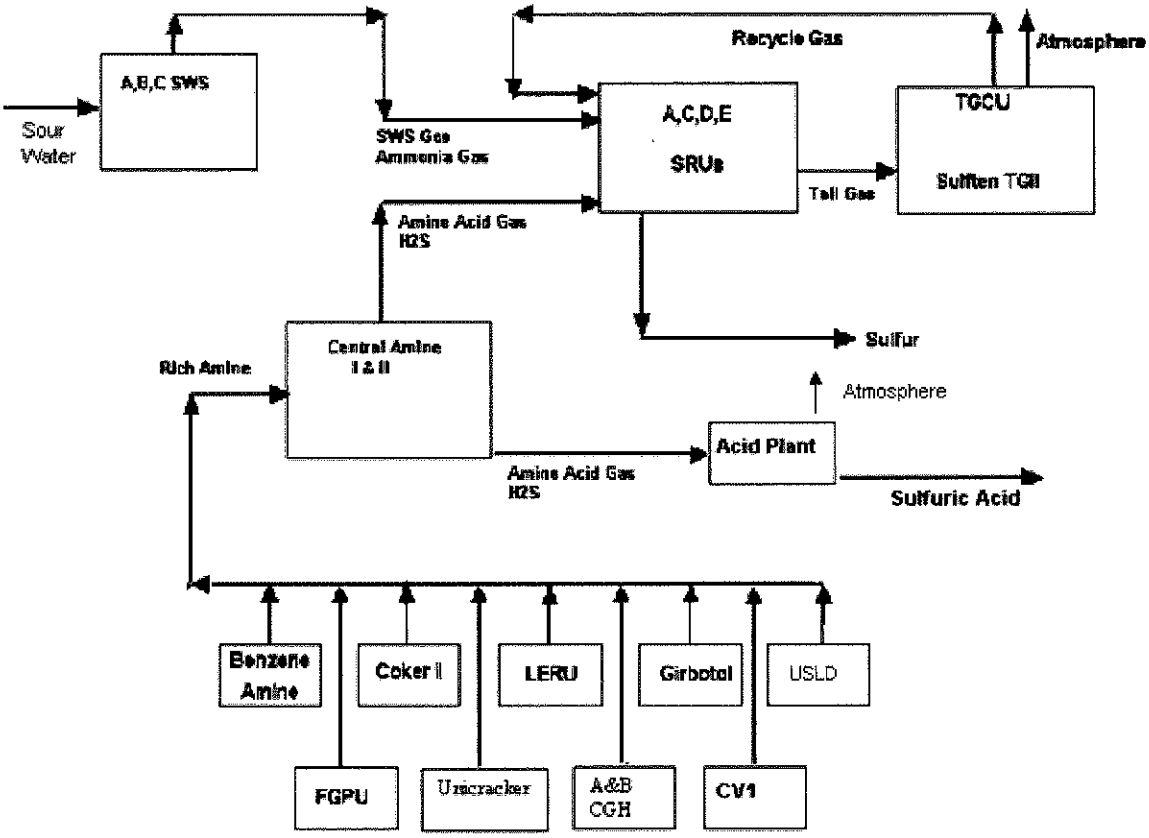
The LCMC PMO Plan will be updated on an annual basis. The update shall include any improvements from optimization studies, routine process optimizations, HAZOP evaluations, and incident report root cause analyses. The Unit Supervisors will be responsible for coordinating this update. The current Unit Supervisors with contact information are listed below:

Greg Aucoin
Acid Plant Unit Supervisor
(337) 708-6451
GAUCOIN@citgo.com

Doug Mayberry
Acid Plant Unit Supervisor
(337) 708-7700
DMAYBER@citgo.com

Appendix A

LCMC Sulfur Recovery Handling Simplified Operating Flow Scheme



Appendix B

SRU & Acid Plant Standard Operating Procedures

Unit	Doc #	Description
A-SRU	SOP-375-101	Start-Up Following Turnaround
A-SRU	SOP-375-102	Shutdown for Turnaround
A-SRU	SOP-375-103	Startup Following Emergency Shutdown
A-SRU	SOP-375-201	Process Pump Operation
A-SRU	SOP-375-204	375L003A/B Sulfur Pit Eductors Normal Operation
A-SRU	SOP-375-301	Utility Systems Checklist
A-SRU	SOP-375-302	Winter Operations
A-SRU	SOP-375-304	Boiler Feedwater Chemical Treatment
A-SRU	SOP-375-305	Unplugging Sulfur Seals/Drip Legs
A-SRU	SOP-375-306	Combustion Air Blower Operation
A-SRU	SOP-375-308	System Blinding
A-SRU	SOP-375-312	A SRU Oil Mist Lube System Operation
A-SRU	SOP-375-313	Operation of Oxygen Enrichment System
A-SRU	SOP-375-401	Process Pump Maintenance/Inspection Preparation
A-SRU	SOP-375-402	B-1001/C-1001 Reaction Furnace/Boiler Maintenance/Inspection Preparation
A-SRU	SOP-375-409	E-1001 Amine Acid Gas Wash Column/F-1001 Ammonia Acid Gas Knockout Drum Maintenance/Inspection Preparation
A-SRU	SOP-375-411	Combustion Air Blower Maintenance/Inspection Preparation
A-SRU	SOP-375-414	F-1006 and F-1007 Condensate System Maintenance/Inspection Preparation
A-SRU	SOP-375-417	A-SRU 375L003A/B Sulfur Pit Eductors Maintenance/Inspection Preparation
C & D SRU	SOP-365-101	Sulfur Loading Rack Operation
C & D SRU	SOP-365-201	Process Pump Operation
C & D SRU	SOP-365-202	Transfer Sulfur Unit Pit to Storage Tank
C & D SRU	SOP-365-203	Transfer Sulfur Unit Pit to A-SRU Pit
C & D SRU	SOP-365-204	Transfer Sulfur Storage Tank (T803/T805) to A-Dock
C & D SRU	SOP-365-205	Transfer A-SRU Sulfur Unit Pit to A-Dock
C & D SRU	SOP-365-206	Winter Operations
C & D SRU	SOP-365-207	Utility Systems Checklist
C & D SRU	SOP-365-302	Sulfur Storage Tank (T803 & T805) Gauging
C & D SRU	SOP-365-401	Sulfur Loading Spout Maintenance/Inspection Preparation
C & D SRU	SOP-365-402	Sulfur Storage Tanks 803/805 Maintenance/Inspection Preparation
C & D SRU	SOP-365-403	Process Pump Maintenance/Inspection Preparation
C & D SRU	SOP-365.1-101	Start-Up Following Turnaround
C & D SRU	SOP-365.1-102	Shutdown for Turnaround
C & D SRU	SOP-365.1-103	Startup Following Emergency Shutdown
C & D SRU	SOP-365.1-201	Process Pump Operation
C & D SRU	SOP-365.1-202	B401A/-B402A Reaction Boiler/Furnace Operation
C & D SRU	SOP-365.1-203	Reheater Operation
C & D SRU	SOP-365.1-204	B-406A Reducing Gas Generator Operation
C & D SRU	SOP-365.1-205	Sulfur-Condenser Operation
C & D SRU	SOP-365.1-206	C-405A Reactor Effluent Cooler Operation

SRU & Acid Plant Standard Operating Procedures

C & D SRU	SOP-365.1-208	F-802 Deaerator Operations
C & D SRU	SOP-365.1-210	365L401A/B Sulfur Pit Eductors Normal Operation
C & D SRU	SOP-365.1-211	Sulfur Wash for Individual Passes of 365D401 in C-SRU
C & D SRU	SOP-365.1-301	Utility Systems Checklist
C & D SRU	SOP-365.1-302	Winter Operations
C & D SRU	SOP-365.1-304	Boiler Feedwater Chemical Treatment
C & D SRU	SOP-365.1-305	Unplugging Sulfur Seals/Drip Legs
C & D SRU	SOP-365.1-306	Combustion Air Blower Operation
C & D SRU	SOP-365.1-307	B-407 Thermal Oxidizer Operation
C & D SRU	SOP-365.1-308	System Blinding
C & D SRU	SOP-365.1-401	Process Pump Maintenance/Inspection Preparation
C & D SRU	SOP-365.1-409	Knock Out Drum Maintenance/Inspection Preparation
C & D SRU	SOP-365.1-410	Combustion Air Blower Maintenance/Inspection Preparation
C & D SRU	SOP-365.1-412	365F802, Deaerator Maintenance/Inspection Preparation
C & D SRU	SOP-365.1-413	T801, Flash Tank Maintenance/Inspection Preparation
C & D SRU	SOP-365.1-414	T802, Demineralized Water Tank Maintenance/Inspection Preparation
C & D SRU	SOP-365.1-415	365B407, Thermal Oxidizer Maintenance/Inspection Preparation
C & D SRU	SOP-365.1-416	365E001 Amine Acid Gas Wash Column Maintenance/Inspection Preparation
C & D SRU	SOP-365.1-417	365L401A/B Sulfur Pit Eductors Maintenance/Inspection Preparation
C & D SRU	SOP-365.2-101	Start-Up Following Turnaround
C & D SRU	SOP-365.2-102	Shutdown for Turnaround
C & D SRU	SOP-365.2-103	Startup Following Emergency Shutdown
C & D SRU	SOP-365.2-201	Process Pump Operation
C & D SRU	SOP-365.2-202	365B501A/365B502A, Reaction Boiler/Furnace Operation
C & D SRU	SOP-365.2-203	Reheater Operation
C & D SRU	SOP-365.2-204	365B506A, Reducing Gas Generator Operation
C & D SRU	SOP-365.2-205	Sulfur-Condenser Operation
C & D SRU	SOP-365.2-206	365C505A, Reactor Effluent Cooler Operation
C & D SRU	SOP-365.2-208	F-802 Deaerator Operations
C & D SRU	SOP-365.2-210	365L506A/B Sulfur Pit Eductors Normal Operation
C & D SRU	SOP-365.2-301	Utility Systems Checklist
C & D SRU	SOP-365.2-302	Winter Operations
C & D SRU	SOP-365.2-304	Boiler Feedwater Chemical Treatment
C & D SRU	SOP-365.2-305	Unplugging Sulfur Seals/Drip Legs
C & D SRU	SOP-365.2-306	Combustion Air Blower Operation
C & D SRU	SOP-365.2-308	System Blinding
C & D SRU	SOP-365.2-401	Process Pump Maintenance/Inspection Preparation
C & D SRU	SOP-365.2-402	365B501A/B/502A Reaction Furnace Maintenance/Inspection Preparation

SRU & Acid Plant Standard Operating Procedures

C & D SRU	SOP-365.2-409	Knock Out Drum Maintenance/Inspection Preparation
C & D SRU	SOP-365.2-410	Combustion Air Blower Maintenance/Inspection Preparation
C & D SRU	SOP-365.2-412	365F802, Deaerator Maintenance/Inspection Preparation
C & D SRU	SOP-365.2-413	T801, Flash Tank Maintenance/Inspection Preparation
C & D SRU	SOP-365.2-414	T802, Demineralized Water Tank Maintenance/Inspection Preparation
C & D SRU	SOP-365.2-416	365L506A/B Sulfur Pit Eductors Maintenance/Inspection Preparation
E-SRU	SOP-331-101	Start-Up Following Turnaround
E-SRU	SOP-331-102	Shutdown for Turnaround
E-SRU	SOP-331-103	Startup Following Emergency Shutdown
E-SRU	SOP-331-201	Process Pump Operation
E-SRU	SOP-331-208	331L005A/B Sulfur Pit Eductors Normal Operation
E-SRU	SOP-331-301	Utility System Checklist
E-SRU	SOP-331-302	Winter Operations
E-SRU	SOP-331-304	Boiler Feedwater Chemical Treatment
E-SRU	SOP-331-305	Unplugging Sulfur Seals/Drip Legs
E-SRU	SOP-331-308	System Blinding
E-SRU	SOP-331-401	Process Pump Maintenance/Inspection Preparation
E-SRU	SOP-331-402	B-901E/B-902E Reaction Furnace Maintenance/Inspection Preparation
E-SRU	SOP-331-416	331L005A/B Sulfur Pit Eductors Maintenance/Inspection Preparation
Acid Plant	SOP-336-101	Normal Unit Startup
Acid Plant	SOP-336-102	Normal Unit Shutdown
Acid Plant	SOP-336-103	Start-up from Turnaround
Acid Plant	SOP-336-104	Shutdown for Turnaround
Acid Plant	SOP-336-105	Cold Unit Startup
Acid Plant	SOP-336-201	Process Pump Operation
Acid Plant	SOP-336-202	JC-602 Combustion Air Blower Operation
Acid Plant	SOP-336-203	B-2A Furnace Operation
Acid Plant	SOP-336-204	C-2E Waste Heat Boiler Operation
Acid Plant	SOP-336-205	B-3 Startup Furnace System Operation
Acid Plant	SOP-336-206	JC-20/A Compressor Operation
Acid Plant	SOP-336-207	Compressor Operation
Acid Plant	SOP-336-208	C-08A, B, C Upper Recycle Coolers Backwash Operation
Acid Plant	SOP-336-210	Blower Operation

SRU & Acid Plant Standard Operating Procedures

Acid Plant	SOP-336-212	336B2A Furnace Operation for Refractory Cure
Acid Plant	SOP-336-301	Utility System Checklist
Acid Plant	SOP-336-302	Winter Operations
Acid Plant	SOP-336-304	B-601 Furnace Operation
Acid Plant	SOP-336-305	Tank Truck Loading
Acid Plant	SOP-336-306	Acid Transfer and Storage
Acid Plant	SOP-336-308	Barge Loading/Unloading
Acid Plant	SOP-336-309	C-2E Waste Heat Boiler Steam Lancing Operation
Acid Plant	SOP-336-314	System Blinding Of The Acid Plant/DC/DA Units
Acid Plant	SOP-336-315	Operation of Oxygen Enrichment System
Acid Plant	SOP-336-401	Process Pumps Maintenance/Inspection Preparation
Acid Plant	SOP-336-402	JC-602 Combustion Air Blower Maintenance/Inspection Preparation
Acid Plant	SOP-336-403	Sludge/Product Acid Storage Tanks Maintenance/Inspection Preparation
Acid Plant	SOP-336-404	Sludge Gun Maintenance/Inspection Preparation
Acid Plant	SOP-336-406	C-2E Waste Heat Boiler Maintenance/Inspection Preparation
Acid Plant	SOP-336-407	E-5 Peabody System Maintenance/Inspection Preparation
Acid Plant	SOP-336-408	Precipitator Maintenance/Inspection Preparation
Acid Plant	SOP-336-409	E-1AF 93% Drying Tower Maintenance/Inspection Preparation
Acid Plant	SOP-336-410	E-1BF 98% Absorption Tower Maintenance/Inspection Preparation
Acid Plant	SOP-336-411	D-2A Converter System Maintenance/Inspection Preparation
Acid Plant	SOP-336-412	Startup Furnace System Maintenance/Inspection Preparation
Acid Plant	SOP-336-413	C-08A, B, C Recycle Coolers Maintenance/Inspection Preparation
Acid Plant	SOP-336-414	Acid Coolers Maintenance/Inspection Preparation
Acid Plant	SOP-336-415	Demister Maintenance/Inspection Preparation
Acid Plant	SOP-336-416	C-2A/B/C/D Waste Heat Exchangers and Preheater Main/Insp Preparation
Acid Plant	SOP-336-417	Compressor Maintenance/Inspection Preparation
Acid Plant	SOP-336-418	Blowers Maintenance/Inspection Preparation
Acid Plant	SOP-336-419	B-602 Exit Stack Maintenance/Inspection Preparation
Acid Plant	SOP-336-420	JC-20/A Compressor Maintenance/Inspection Preparation
Acid Plant	SOP-336-421	F-6 Compressor Knock Out Drum Maintenance/Inspection Preparation
Acid Plant	SOP-336-423	336F34 or 336F53 or 336F701A Knock Out Drum Maintenance/Inspection Preparation
Acid Plant	SOP-336-424	336E1AF 93% Drying Tower Candle Inspection and Replacement

Appendix C

TGTUs Standard Operating Procedures

Sulften	SOP-350-101	Start-up Following Turnaround
Sulften	SOP-350-102	Shutdown For Turnaround
Sulften	SOP-350-103	Start-up from Hot Standby Operation
Sulften	SOP-350-104	Shutdown to Hot Standby Operation
Sulften	SOP-350-105	Start-up Following Emergency Shutdown
Sulften	SOP-350-201	Electric Pump Operation
Sulften	SOP-350-202	Filter Operation
Sulften	SOP-350-203	Cooler/Exchanger Operation
Sulften	SOP-350-206	Cooler Backwash Operation
Sulften	SOP-350-207	Fin Fan Operation
Sulften	SOP-350-301	Utility System Checklists
Sulften	SOP-350-302	Winter Operation
Sulften	SOP-350-304	Solvent Truck Unloading
Sulften	SOP-350-305	Solvent Transfer
Sulften	SOP-350-307	350E02 Water Wash & Chemical Cleaning
Sulften	SOP-350-401	Pump Maintenance/Inspection Preparation
Sulften	SOP-350-402	Filter Maintenance/Inspection Preparation
Sulften	SOP-350-403	Cooler/Exchanger Maintenance/Inspection Preparation
Sulften	SOP-350-405	Fin Fan Maintenance/Inspection Preparation
Sulften	SOP-350-406	C-06 Stripper Reboiler Maintenance/Inspection Preparation
Sulften	SOP-350-408	Stripper Maintenance/Inspection Preparation
Sulften	SOP-350-409	Drum Maintenance/Inspection Preparation
Sulften	SOP-350-410	Solvent Tank Maintenance/Inspection Preparation
Sulften	SOP-350-412	Pressure Safety Valve Maintenance/Inspection Preparation
TGII	SOP-376-101	Start-up Following Turnaround
TGII	SOP-376-102	Shutdown For Turnaround
TGII	SOP-376-103	Shutdown to Hot Standby Operation
TGII	SOP-376-105	Start-up from Hot Standby Operation
TGII	SOP-376-106	Start-up Following Emergency Shutdown
TGII	SOP-376-201	Process Pump Operation
TGII	SOP-376-202	Filter Operation
TGII	SOP-376-207	Fin Fan Operation
TGII	SOP-376-209	Cooling Tower Operation
TGII	SOP-376-210	376G107 Carbon Filter Steam-Out
TGII	SOP-376-301	Utility Systems
TGII	SOP-376-302	Winter Operations

TGTUs Standard Operating Procedures

TGII	SOP-376-305	Solvent Transfer
TGII	SOP-376-311	Tail Gas II Oil Mist Lube System Operation
TGII	SOP-376-401	Process Pump Maintenance/Inspection Preparation
TGII	SOP-376-402	E-103 Stripper Maintenance/Inspection Preparation
TGII	SOP-376-403	Cooler/Exchanger Maintenance/Inspection Preparation
TGII	SOP-376-404	C-106 Stripper Reboiler Maintenance/Inspection Preparation
TGII	SOP-376-405	Filter Maintenance/Inspection Preparation
TGII	SOP-376-406	Drum Maintenance/Inspection Preparation
TGII	SOP-376-407	Solvent Tank Maintenance/Inspection Preparation
TGII	SOP-376-408	Fin Fan Maintenance/Inspection Preparation
TGII	SOP-376-410	Cooling Tower Maintenance/Inspection Preparation

Appendix D

Central Amine & Satellite Contactor Standard Operating Procedures

CA	SOP-314-101	Start-up Following Turnaround
CA	SOP-314-104	Shutdown for Turnaround
CA	SOP-314-106	Start-up Following Emergency Shutdown
CA	SOP-314-201	Electric Driven Process Pump Operation
CA	SOP-314-202	Turbine Driven Process Pump Operation
CA	SOP-314-204	Amine Stripper Reboiler Bypass Operation
CA	SOP-314-205	Fin Fan Operation
CA	SOP-314-206	F-228 Oil Separator Operations
CA	SOP-314-207	C-234A/C-1234A Amine Exchanger Bypass Operation
CA	SOP-314-210	314F241 Waterboot Blowcase Operation
CA	SOP-314-301	Utility Systems Checklist
CA	SOP-314-302	Winter Operations
CA	SOP-314-306	Unload Fresh Amine to F-225 and F-1225 Amine Make-up Tanks
CA	SOP-314-401	Electric Driven Process Pump Maintenance/Inspection Preparation
CA	SOP-314-402	Turbine Driven Process Pump Maintenance/Inspection Preparation
CA	SOP-314-403	Pressure Safety Valve Maintenance/Inspection Preparation
CA	SOP-314-404	Lean/Rich Amine Exchanger Maintenance/Inspection Preparation
CA	SOP-314-405	Amine Stripper Reboiler Maintenance/Inspection Preparation
CA	SOP-314-408	Acid Gas Trim Cooler/Trim Cooler Knockout Drum Maintenance/Inspection Preparation
CA	SOP-314-410	Stripper Reflux Drum Maintenance/Inspection Preparation
CA	SOP-314-413	F-225 Amine Make-Up Tank Maintenance/Inspection Preparation
CA	SOP-314-415	F-228 Amine Oil Separator Maintenance/Inspection Preparation
CA	SOP-314-416	G-210 Lean Amine Element Filter Maintenance/Inspection Preparation
CA	SOP-314-417	Amine Stripper Maintenance/Inspection Preparation
CA	SOP-314-418	Fin Fan Maintenance/Inspection Preparation
CA	SOP-314-419	F-1220 Rich Amine Flash Drum Maintenance/Inspection Preparation
CA	SOP-314-420	F-220 Rich Amine Flash Drum Maintenance/Inspection Preparation
CA	SOP-314-421	F1223 Lean Amine Surge Tank Maintenance/Inspection Preparation
CA	SOP-314-422	F223 Lean Amine Surge Tank Maintenance/Inspection Preparation
CA	SOP-314-425	314F241 Waterboot Blowcase Maintenance/Inspection Preparation
CKII	SOP-326-102	Start-up Following Turnaround
CKII	SOP-326-105	Shutdown for Turnaround
CKII	SOP-326-106	Amine/Gas Recovery System Steamout for Shutdown
CKII	SOP-326-111	Amine System Steam Test
CKII	SOP-326-425	326E204/326F226 Amine Contactor Maintenance/Inspection Preparation
CKII	SOP-326-435	326C229, Lean Amine Cooler Maintenance/Inspection Preparation

Central Amine & Satellite Contactor Standard Operating Procedures

A CGH	SOP-484-101	A Cat Gasoline Hydrotreater Unit Preparation for Initial Start-up or Start-up from Turnaround
A CGH	SOP-484-102	A Cat Gasoline Hydrotreater Unit Normal Start-up on Gasoline
A CGH	SOP-484-103	A Cat Gasoline Hydrotreater Unit Normal Shutdown/Prepare for T/A
A CGH	SOP-484-104	Start-up "A" Cat Gasoline Hydrotreater Unit with Pre-activated Catalyst in 484D101 Saturator
A CGH	SOP-484-105	Start-up "A" Cat Gasoline Hydrotreater Unit without Pre-sulfided Catalyst in 484D101 Saturator
A CGH	SOP-484-207	484E103 Amine Absorber Operation
A CGH	SOP-484-219	484F114 Amine Sump Drum Operations
A CGH	SOP-484-416	484E103 Amine Absorber Maintenance/Inspection Preparation
A CGH	SOP-484-417	484F111 Amine Absorber KO Drum Maintenance/Inspection Preparation
A CGH	SOP-484-425	484F214 Amine Sump System Maintenance/Inspection Preparations
B CGH	SOP-485-101	B Cat Gasoline Hydrotreater Unit Preparation for Initial Start-up or Start-up from Turnaround
B CGH	SOP-485-102	B Cat Gasoline Hydrotreater Unit Normal Start-up on Gasoline
B CGH	SOP-485-103	B Cat Gasoline Hydrotreater Unit Normal Shutdown/Prepare for T/A
B CGH	SOP-485-104	Start-up "B" Cat Gasoline Hydrotreater Unit with Pre-activated Catalyst in 485D201 Saturator
B CGH	SOP-485-105	Start-up "B" Cat Gasoline Hydrotreater Unit without Pre-sulfided Catalyst in 485D201 Saturator
B CGH	SOP-485-207	485E203 Amine Absorber Operation
B CGH	SOP-485-219	485F214 Amine Sump Drum Operations
B CGH	SOP-485-416	485E103 Amine Absorber Maintenance/Inspection Preparation
B CGH	SOP-485-417	485F111 Amine Absorber KO Drum Maintenance/Inspection Preparation
B CGH	SOP-485-425	485F214 Amine Sump System Maintenance/Inspection Preparations
BA	SOP-315-101	Normal Unit Start-up
BA	SOP-315-104	Normal Shutdown
BA	SOP-315-106	Amine Start-up Following Turnaround
BA	SOP-315-107	Amine Shutdown for Turnaround
ULSD	SOP-399-101	Prestart-up Inspection
ULSD	SOP-399-102	Start-up Following Turnaround/Catalyst Change
ULSD	SOP-399-103	Start-up Following Emergency Shutdown
ULSD	SOP-399-104	Start-up Following Shutdown without Catalyst Change
ULSD	SOP-399-105	Shutdown For Turnaround/Catalyst Change
ULSD	SOP-399-106	Shutdown without Catalyst Change
ULSD	SOP-399-107	Static Operation
ULSD	SOP-399-108	Return to Normal Operations from Static Operations
ULSD	SOP-399-105	Shutdown For Turnaround/Catalyst Change
ULSD	SOP-399-110	Shutdown For Turnaround/Catalyst Change (Using RTI)
ULSD	SOP-399-204	HP Lean Amine Booster Pump, JP-110 A/B, Operation
ULSD	SOP-399-302	Change Charcoal, Lean Amine Charcoal Filters, G-103A/B
ULSD	SOP-399-319	Steam Out 399F113 Rich Amine Flash Drum
ULSD	SOP-399-404	HP Lean Amine Booster Pump, JP-110A/B, Maintenance/Inspection Preparation
ULSD	SOP-399-413	Lean Amine Charcoal Filter, G-103A/B, Maintenance/Inspection Preparation
ULSD	SOP-399-414	Amine Cartridge Filter Maintenance/Inspection Preparation
FGPU	SOP-339-101	Start-Up Following Turnaround
FGPU	SOP-339-102	Unit Shutdown for Turnaround
FGPU	SOP-339-105	F-4, Amine Flash & Surge Tank Bypass Operation

Central Amine & Satellite Contactor Standard Operating Procedures

FGPU	SOP-339-201	Process Pump Operation
FGPU	SOP-339-403	C-07A/B/C Amine Exchanger Maintenance/Inspection Preparation
FGPU	SOP-339-404	Amine Contactor Maintenance/Inspection Preparation
FGPU	SOP-339-407	339F4 Amine Flash Tank Maintenance/Inspection Preparation
FGPU	SOP-339-409	Amine Contactor Scrubber Maintenance/Inspection Preparation
LERU	SOP-319-101	C4 Recovery Unit Start-up Following Turnaround
LERU	SOP-319-102	C4 - Recovery Shutdown for Turnaround
LERU	SOP-319-104	C4 - Recovery Amine Treater Start-up Following Turnaround
LERU	SOP-319-105	C4 Recovery Amine Treater Shutdown for Turnaround
LERU	SOP-319-107	C4 - Recovery Start-up Following Emergency Shutdown
LERU	SOP-319-421	C4 Amine Treater Maintenance/Inspection Preparation
Uni	SOP-320-101	Normal Unit Startup
Uni	SOP-320-102	Start-Up Following Turnaround
Uni	SOP-320-104	Normal Unit Shutdown
Uni	SOP-320-105	Shutdown for Turnaround
Uni	SOP-320-521	Amine Contactor Maintenance/Inspection Preparation
Girb (E&W)	SOP-330-101	330F25A, West C3 Contactor System Shutdown for Turnaround
Girb (E&W)	SOP-330-102	330F25A, West C3 Mix Contactor System Start-up Following Turnaround
Girb (E&W)	SOP-330-103	330F25B, East C3 Contactor System Startup Following Turnaround
Girb (E&W)	SOP-330-104	East C3 Contactor System Static Operation
Girb (E&W)	SOP-330-106	West C3 Mix Contactor System Static Operation
Girb (E&W)	SOP-330-108	330F25B, East C3 Contactor System Shutdown for Turnaround
Girb (E&W)	SOP-330-406	330F25A, West C3 Mix Contactor Maintenance/Inspection Preparation
Girb (E&W)	SOP-330-407	330F25B, East C3 Contactor Maintenance/Inspection Preparation
Girb (E&W)	SOP-330-412	330F6, MEA Knockout Drum Maintenance/Inspection Preparation
Girb (E&W)	SOP-330-416	330F5, Amine Flash Drum Maintenance/Inspection Preparation

Appendix E

Sour Water Stripper Standard Operating Procedures

SWS	SOP-359-101	Train "A" Sour Water Stripper Start-up Following Turnaround
SWS	SOP-359-102	Train "A" Shutdown for Turnaround
SWS	SOP-359-103	Start-up Following Emergency Shutdown
SWS	SOP-359-104	Train B Sour Water Stripper Start-up Following Turnaround
SWS	SOP-359-105	Train "C" Sour Water Stripper Start-up Following Turnaround
SWS	SOP-359-106	Train "B" Shutdown for Turnaround
SWS	SOP-359-107	Train "C" Shutdown for Turnaround
SWS	SOP-359-201	Electric Driven Process Pump Operation
SWS	SOP-359-204	Fin Fan Operation
SWS	SOP-359-205	SWS Positive Displacement Pump Operations
SWS	SOP-359-301	Utility Systems Checklist
SWS	SOP-359-302	Winter Operations
SWS	SOP-359-304	Re-Route Feed to Alternate Unit
SWS	SOP-359-305	Oil Draw - off Operation
SWS	SOP-359-306	Anti-Foam Injection
SWS	SOP-359-307	SWS Scrubber Make-Up System Operations
SWS	SOP-359-308	SWS Acid Dilution System Operations
SWS	SOP-359-401	Electric Driven Process Pump Maintenance/Inspection Preparation
SWS	SOP-359-402	Pressure Safety Valve Maintenance/Inspection Preparation
SWS	SOP-359-403	C-301A/B/C - 1/2 Feed/Bottom Exchanger Maintenance/Inspection Preparation
SWS	SOP-359-404	C-302 Stripper Reboiler Maintenance/Inspection Preparation
SWS	SOP-359-405	C-303 Pump-Around Cooler Maintenance/Inspection Preparation
SWS	SOP-359-406	E-301 Sour Water Stripper Maintenance/Inspection Preparation
SWS	SOP-359-407	F-301 Vapor Separator Drum Maintenance/Inspection Preparation
SWS	SOP-359-408	F-302 "A", "B" or "C" Corrugated Plate Interceptor Maintenance/Inspection Preparation
SWS	SOP-359-409	F-303 Sour Water Surge Tank Maintenance/Inspection Preparation
SWS	SOP-359-410	F-304 Condensate Pot Maintenance/Inspection Preparation
SWS	SOP-359-411	F-305 Ammonia Acid Gas K.O. Drum Maintenance/Inspection Preparation
SWS	SOP-359-412	F-307 Slop Oil Tank Maintenance/Inspection Preparation
SWS	SOP-359-414	Fin Fan Maintenance/Inspection Preparation
SWS	SOP-359-415	SWS Positive Displacement Pumps Maintenance/Inspection Preparation
SWS	SOP-359-416	359F321 Scrubber Make-Up Drum Maintenance/Inspection Preparation

Appendix F

SRHU Emergency Operating Procedures

Unit	Doc #	Description
A-SRU	EOP-375-501	A-SRU Emergency Shutdown
A-SRU	EOP-375-502	Loss of Electrical Power
A-SRU	EOP-375-503	Power Blip
A-SRU	EOP-375-504	Loss of Uninterrupted Power Supply
A-SRU	EOP-375-505	Loss of Central Control Room Console
A-SRU	EOP-375-506	Loss of Unit Feed
A-SRU	EOP-375-507	Loss of Natural Gas
A-SRU	EOP-375-508	A-SRU Loss of 250 psig Steam
A-SRU	EOP-375-509	Loss of Cooling Water
A-SRU	EOP-375-510	Loss of Well Water
A-SRU	EOP-375-512	Loss of Instrument Air
A-SRU	EOP-375-513	Loss of Plant Air
A-SRU	EOP-375-514	Furnace Tube Leak
A-SRU	EOP-375-516	Loss of Boiler Feedwater
A-SRU	EOP-375-517	Loss of Combustion Air
A-SRU	EOP-375-518	Loss of Nitrogen
A-SRU	EOP-375-519	Loss of 50 psig Steam
A-SRU	EOP-375-520	Blown Sulfur Seal
C & D SRU	EOP-365-504	Loss of Electrical Power
C & D SRU	EOP-365-505	Power Blip
C & D SRU	EOP-365-506	Loss of 50 psig Steam
C & D SRU	EOP-365.1-501	C-SRU Emergency Shutdown
C & D SRU	EOP-365.1-502	Loss of Electrical Power
C & D SRU	EOP-365.1-503	Power Blip
C & D SRU	EOP-365.1-504	Loss of Uninterrupted Power Supply (UPS)
C & D SRU	EOP-365.1-505	Loss of Central Control Room Console
C & D SRU	EOP-365.1-506	Loss of Unit Feed
C & D SRU	EOP-365.1-507	Loss of Natural Gas
C & D SRU	EOP-365.1-508	Loss of 250 psig Steam
C & D SRU	EOP-365.1-509	Loss of Cooling Water
C & D SRU	EOP-365.1-510	Loss of Well Water
C & D SRU	EOP-365.1-511	Loss of Instrument Air
C & D SRU	EOP-365.1-512	Loss of Plant Air
C & D SRU	EOP-365.1-513	Furnace Tube Leak
C & D SRU	EOP-365.1-515	Loss of Boiler Feedwater
C & D SRU	EOP-365.1-516	Loss of Combustion Air
C & D SRU	EOP-365.1-517	Loss of Nitrogen
C & D SRU	EOP-365.1-518	Loss of 50 psig Steam
C & D SRU	EOP-365.1-519	Blown Sulfur Seal
C & D SRU	EOP-365.2-501	D-SRU Emergency Shutdown
C & D SRU	EOP-365.2-502	Loss of Electrical Power

SRHU Emergency Operating Procedures

C & D SRU	EOP-365.2-503	Power Blip
C & D SRU	EOP-365.2-504	Loss of Uninterrupted Power Supply (UPS)
C & D SRU	EOP-365.2-505	Loss of Central Console Room Console
C & D SRU	EOP-365.2-506	Loss of Unit Feed
C & D SRU	EOP-365.2-507	Loss of Natural Gas
C & D SRU	EOP-365.2-508	Loss of 250 psig Steam
C & D SRU	EOP-365.2-509	Loss of Cooling Water
C & D SRU	EOP-365.2-510	Loss of Well Water
C & D SRU	EOP-365.2-511	Loss of Instrument Air
C & D SRU	EOP-365.2-512	Loss of Plant Air
C & D SRU	EOP-365.2-513	Furnace Tube Leak
C & D SRU	EOP-365.2-515	Loss of Boiler Feedwater
C & D SRU	EOP-365.2-516	Loss of Combustion Air
C & D SRU	EOP-365.2-517	Loss of Nitrogen
C & D SRU	EOP-365.2-518	Loss of 50 psig Steam
C & D SRU	EOP-365.2-519	Blown Sulfur Seal
E-SRU	EOP-331-501	331 E-SRU, Emergency Shutdown
E-SRU	EOP-331-502	Loss of Electrical Power
E-SRU	EOP-331-503	Power Blip
E-SRU	EOP-331-504	Loss of Uninterrupted Power Supply (UPS)
E-SRU	EOP-331-505	Loss of Central Control Room Console
E-SRU	EOP-331-506	Loss of Unit Feed
E-SRU	EOP-331-507	Loss of Natural Gas
E-SRU	EOP-331-508	Loss of 250 psig Steam
E-SRU	EOP-331-509	Loss of Cooling Water
E-SRU	EOP-331-510	Loss of Well Water
E-SRU	EOP-331-511	Loss of Instrument Air
E-SRU	EOP-331-512	Loss of Plant Air
E-SRU	EOP-331-513	Furnace Tube Leak
E-SRU	EOP-331-515	Loss of Boiler Feedwater
E-SRU	EOP-331-516	Loss of Combustion Air
E-SRU	EOP-331-517	Loss of Nitrogen
E-SRU	EOP-331-518	Loss of 50 psig Steam
E-SRU	EOP-331-519	Blown Sulfur Seal
Sulften	EOP-350-501	Sulften Emergency Shutdown
Sulften	EOP-350-502	Loss of Electrical Power
Sulften	EOP-350-503	Power Blip
Sulften	EOP-350-504	Loss of Uninterrupted Power Supply (UPS)
Sulften	EOP-350-505	Loss of Central Control Room Console
Sulften	EOP-350-506	Loss of Unit Feed
Sulften	EOP-350-507	Loss of 50 psig Steam
Sulften	EOP-350-508	Loss of Cooling Water
Sulften	EOP-350-510	Loss of Instrument Air
Sulften	EOP-350-512	Loss of Lean Solvent Circulation
Sulften	EOP-350-513	Loss of Rich Solvent Circulation

SRHU Emergency Operating Procedures

Sulften	EOP-350-514	Loss of RSC Analyzer
Sulften	EOP-350-515	SO2 Breakthrough
Sulften	EOP-350-516	Loss of Nitrogen
Sulften	EOP-350-518	High RSC in Vent Gas
TGII	EOP-376-501	Tail Gas II Emergency Shutdown
TGII	EOP-376-502	Loss of Electrical Power
TGII	EOP-376-503	Power Blip
TGII	EOP-376-504	Loss of Uninterrupted Power
TGII	EOP-376-506	Loss of Unit Feed
TGII	EOP-376-508	Loss of Quench Water Circulation
TGII	EOP-376-511	Loss of Plant Air
TGII	EOP-376-512	Loss of Lean Solvent Circulation
TGII	EOP-376-513	Loss of Rich Solvent Circulation
TGII	EOP-376-514	Loss of RSC Analyzer
TGII	EOP-376-515	SO2 Breakthrough
TGII	EOP-376-516	Loss of Cooling Water
TGII	EOP-376-517	Loss of Nitrogen
TGII	EOP-376-518	High RSC in Vent Gas
SWS	EOP-359-501	Sour Water Stripper Emergency Shutdown
SWS	EOP-359-502	Loss of Electrical Power
SWS	EOP-359-503	Power Blip
SWS	EOP-359-504	Loss of Uninterrupted Power Supply
SWS	EOP-359-505	Loss of Unit Feed
SWS	EOP-359-506	Loss of 50 psig Steam
SWS	EOP-359-507	Loss of Nitrogen
SWS	EOP-359-510	Loss of Well Water
SWS	EOP-359-511	Loss of Instrument Air
SWS	EOP-359-512	Loss of Plant Air
SWS	EOP-359-513	Loss of Console Operation
SWS	EOP-359-514	Sour Water Stripper Hydrocarbon Hit
SWS	EOP-359-515	Loss of Sabine River Water
CA	EOP-314-501	Central Amine Emergency Shutdown
CA	EOP-314-502	Loss of Electrical Power
CA	EOP-314-503	Power Blip
CA	EOP-314-504	Loss of Uninterrupted Power Supply (UPS)
CA	EOP-314-505	Loss of Cooling Water
CA	EOP-314-506	Loss of Unit Feed
CA	EOP-314-507	Loss of 50 psig Steam
CA	EOP-314-509	Loss of 250 psig Steam
CA	EOP-314-511	Loss of Instrument Air
CA	EOP-314-512	Loss of Plant Air
CA	EOP-314-514	Loss of Central Control Room Console
CKII	EOP-326-529	Loss of Electrical Power
CKII	EOP-326-530	Loss of Uninterrupted Power Supply
CKII	EOP-326-531	Loss Of Central Control Room Console
CKII	EOP-326-532	Power Blip

SRHU Emergency Operating Procedures

CKII	EOP-326-536	Loss of Feed
CKII	EOP-326-542	Loss of Instrument Air
BA	EOP-315-200	Emergency Shutdown
BA	EOP-315-201	Start-up Following Emergency Shutdown
BA	EOP-315-203	Loss of Electrical Power
BA	EOP-315-204	Loss of Uninterrupted Power Supply
BA	EOP-315-205	Loss of Central Control Room Console
BA	EOP-315-206	Power Blip
BA	EOP-315-213	Loss of Cooling Water
BA	EOP-315-214	Loss of Plant Air
BA	EOP-315-215	Loss of Instrument Air
BA	EOP-315-218	Backup Utility Systems
BA	EOP-315-224	Amine Emergency Shutdown
BA	EOP-315-225	Amine Start-up Following Emergency Shutdown
FGPU	EOP-339-501	Emergency Shutdown
FGPU	EOP-339-502	Loss of Control Room
FGPU	EOP-339-503	Loss of Electrical Power
FGPU	EOP-339-504	Loss of Steam
FGPU	EOP-339-505	Loss of Cooling Water
FGPU	EOP-339-506	Loss of Instrument Air
FGPU	EOP-339-507	Loss of Plant Air
FGPU	EOP-339-508	Loss of Nitrogen
FGPU	EOP-339-510	Power Blip
FGPU	EOP-339-511	Loss of Feed
FGPU	EOP-339-512	Loss of Flare Header
FGPU	EOP-339-514	Loss of 440 Volt Electrical Power to 339JP92A/B
FGPU	EOP-339-515	Loss of Caustic to 339T01 Caustic Day Tank
LERU	EOP-319-501	Loss of Electrical Power
LERU	EOP-319-502	Loss of Instrument Air
LERU	EOP-319-503	Loss of Cooling Water Make-up
LERU	EOP-319-504	Power Blip
LERU	EOP-319-511	C4 - Recovery Emergency Shutdown
LERU	EOP-319-514	Loss of Central Control Room Console
LERU	EOP-319-515	Loss of Plant Air
LERU	EOP-319-516	Loss of Uninterrupted Power Supply
LERU	EOP-319-522	H2S Exceedance
Uni	EOP-320-201	Emergency Shutdown
Uni	EOP-320-203	Loss of Electric Power
Uni	EOP-320-204	Loss of Uninterrupted Power Supply (UPS)
Uni	EOP-320-205	Loss of Central Control Room Console
Uni	EOP-320-206	Power Blip
Uni	EOP-320-213	Loss of Cooling Water
Uni	EOP-320-215	Loss of Instrument Air
Uni	EOP-320-227	Emergency Load Shed for SRU Outage

SRHU Emergency Operating Procedures

Acid Plant	EOP-336-501	Acid Plant/DC/DA Emergency Shutdown
Acid Plant	EOP-336-502	Loss of Electrical Power
Acid Plant	EOP-336-504	Loss of Uninterrupted Power Supply (UPS)
Acid Plant	EOP-336-505	Loss of Central Control Room Console
Acid Plant	EOP-336-506	Loss of H2S Feed
Acid Plant	EOP-336-508	Loss of Acid Circulation
Acid Plant	EOP-336-509	Loss of Fuel Gas
Acid Plant	EOP-336-510	Loss of J-1-C Compressor
Acid Plant	EOP-336-511	Loss of JC-601 Compressor
Acid Plant	EOP-336-512	Loss of JB-103 Compressor
Acid Plant	EOP-336-513	Loss of 250 psig Steam
Acid Plant	EOP-336-514	Loss of Cooling Water
Acid Plant	EOP-336-515	Loss of Well Water
Acid Plant	EOP-336-516	Loss of Instrument Air
Acid Plant	EOP-336-517	Loss of Plant Air
Acid Plant	EOP-336-518	Loss of O2
Acid Plant	EOP-336-519	Loss of Nitrogen
Acid Plant	EOP-336-520	Abnormal Unit Feed
Acid Plant	EOP-336-521	Loss of Peabody System Recirculation Water
Acid Plant	EOP-336-522	Operate Unit without Sludge Feed
ULSD	EOP-399-501	Emergency Shutdown
ULSD	EOP-399-502	Loss of Electrical Power
ULSD	EOP-399-507	Loss of Cooling Water
ULSD	EOP-399-508	Loss of Amine
ULSD	EOP-399-509	Loss of Instrument Air
Girb (E&W)	EOP-330-501	Emergency Shutdown of 330F25B, East C3 Contactor System
Girb (E&W)	EOP-330-502	Loss of Electrical Power
Girb (E&W)	EOP-330-503	Power Blip
Girb (E&W)	EOP-330-506	Loss of 330F25A, West C3 Mix Contactor System Feed
Girb (E&W)	EOP-330-507	Loss of 330F25B, Amine Contactor East Absorber System Feed
Girb (E&W)	EOP-330-512	Loss of Instrument Air
Girb (E&W)	EOP-330-516	Emergency Shutdown of 330F25A, West C3 Mix Contactor System
Girb (E&W)	EOP-330-517	Loss of 330F19, West Dryer and 330F19A, East Dryer
Girb (E&W)	EOP-330-521	West C3 Mix Contactor System Startup Following Emergency Shutdown
Girb (E&W)	EOP-330-522	East C3 Contactor System Startup Following Emergency Shutdown
A-CGH	EOP-484-501	Emergency Shutdown
A-CGH	EOP-484-502	Loss of Electric Power
A-CGH	EOP-484-503	Power Blip
A-CGH	EOP-484-504	Loss of DCS Console
A-CGH	EOP-484-506	Loss of Instrument Air
A-CGH	EOP-484-509	Loss of Cooling Water
A-CGH	EOP-484-511	Loss of Process Pumps
A-CGH	EOP-484-514	Loss of Amine Flow to Amine Absorber

SRHU Emergency Operating Procedures

B-CGH	EOP-485-501	Emergency Shutdown
B-CGH	EOP-485-502	Loss of Electric Power
B-CGH	EOP-485-503	Power Blip
B-CGH	EOP-485-504	Loss of DCS Console
B-CGH	EOP-485-506	Loss of Instrument Air
B-CGH	EOP-485-509	Loss of Cooling Water
B-CGH	EOP-485-511	Loss of Process Pumps
B-CGH	EOP-485-514	Loss of Amine Flow to Amine Absorber

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ATTACHMENT 5

NSPS Applicability Of Hydrocarbon Flaring Devices

Paragraph 75 does not address when equipment for which an AMP has been submitted pursuant to the Consent Decree is to become an affected facility.

Consistent with Paragraph 64c of this Consent Decree and subsequent Consent Decrees issued to other refining companies, the equipment will become an affected facility when the AMP has been approved or CITGO has fully implemented its approved plan. Such plan may include a revised AMP application, physical or operational changes to the equipment, or additional or different monitoring.

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ATTACHMENT 6

Acid Gas Flaring and Tail Gas Incidents

RCFA Status Summary

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Acid Gas Flaring and Tail Gas Incidents

RCFA Action Item Status

Incident Date	Incident Number	RCFA Completed	RCFA Submitted	Corrective Action Completion Date	Corrective Action Expected Completion Date	Comments
06/19/2006	LC-TG-03-2006-061906	08/01/2006	08/02/2006	12/21/2006 (Study Completion)	7/23/2014	See Note (1)
07/04/2006	LC-TG-04-2006-070406	08/07/2006	08/16/2006	12/15/2006 (Study Completion)	7/23/2014	See Note (1)
12/27/2006	LC-TG-06-2006-122706	01/24/2007	02/07/2007		7/23/2014	See Note (1)
02/10/2008	LC-TG-01-2008-021008	03/24/2008	03/25/2008		7/23/2014	See Note (1)

Notes:

1. The Refinery completed the engineering study on alternative dispositions of tail gas or other means to reduce SO_2 emissions to below 500 lbs in a 24 hour period during planned startups from turnarounds on December 15, 2006. Project work has been initiated to install and test equipment to reduce SO_2 emissions during start-up of an SRP (completed at A, C & E-SRP with success). This equipment will be installed during upcoming planned SRP turnarounds (see new corrective action completion dates). Procedures will be revised and training on operation of newly installed equipment will be performed. The corrective action completion date will correspond to the expected turnaround date of the SRP being upgraded or final date for multiple units.

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ATTACHMENT 7

Hydrocarbon Flaring Incident RCFA's

Table of Contents

Hydrocarbon Flaring Incident RCFA Summary

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[1] New Hydrocarbon Flaring Incidents for this reporting period.

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Hydrocarbon Flaring Incident RCFA Action Item Status

Incident Date	Incident Number	RCFA Completed	Corrective Action Completion Date	Corrective Action Expected Completion Date	Comments
06/08/2009	LC-HC-02-2009-060809	07/22/2009		2017	Measure (A) See Note (1)
11/24/2011	LC-HC-06-2011-112411	12/14/2011	03/29/2012	03/31/2012	Measure (A)
01/05/2012	LC-HC-01-2012-010512	02/13/2012	01/11/2012	01/11/2012	Measure (A)
05/18/2012	LC-HC-02-2012-051812	06/22/2012	05/18/2012	05/19/2012	Measure (A)
				08/31/2012	Measure (B)

Notes:
1. Tower must be taken out of service and pressure tested before pressure relief valve set pressure is raised. Completion date reflects estimated turnaround date.

APPENDIX A

Hydrocarbon Flaring Incident RCFA

LC-HC-01-2012-010512

CITGO Petroleum Corporation
Lake Charles Refinery
Hydrocarbon Flaring Incident Report – 01/05/12
RCFA Completed 02/13/12

Incident Number: LC-HC-1-2012-010512

Brief Description of Incident

On January 5, 2012 at approximately 3:55pm, the 13.8kV feeder 444-SPG-FRP5D faulted causing a power outage to a portion of the Coker II unit (Sub 49 Bus B Side). The Coker II compressor, JC-201 was lost and unit gas was flared to the B-11 flare. The fault occurred in a lead splice located in Manhole 140. The faulted splice was located, isolated and power was restored through the tie breaker at Sub 49 within approximately 15 – 20 minutes

B-11 Flaring

Incident Start Date:	01/05/12	**Incident Start Time:**	15:55
Incident End Date:	01/05/12	**Incident End Time:**	16:37

Total Estimated SO_2 Emissions: 0.84 tons	**Total Estimated SO_2 Emissions AVG:** 2,394.1 lbs/hr

Calculations per Paragraph 92 for the B-8 Flare

Tons of SO_2 Emitted = [FR][TD][ConcH_2S][8.44 x 10^{-5}]

= [283,322 SCFH] [0.7 hours] [0.05] [8.44 x 10^{-5}] = 0.84 tons

Rate of SO_2 emissions in lbs/hr = [FR][ConcH_2S][0.169]

= [283,322 SCFH] [0.05] [0.169] = 2,394.1 lbs of SO_2/hour

The quantity of gas sent to the flare was measured using the B-11 flare flow meter. H2S values were estimated based on historical average values.

Steps taken to limit the duration and/or quantity of sulfur dioxide emissions

Steps were immediately taken to locate, isolate and restore power to the Coker II unit. Thereafter, steps were taken to immediately bring the JC-201 compressor back on line.

CITGO Petroleum Corporation
Lake Charles Refinery
Hydrocarbon Flaring Incident Report – 01/05/12
RCFA Completed 02/13/12

Root Cause and significant contributing cause(s)

Based on the fact that pre-failure maintenance testing of the cable showed no signs of insulation deterioration, it is believed that a breach in the cables protective lead jacket initiated the failure. Once breached, contaminates inside the manhole penetrated the cable which lead to catastrophic failure of the splice.

Measures to prevent a recurrence of a similar event and proposed corrective actions:

Action Items

(A) Test protective relays on breaker 444-SPG-BRP5D to verify correct settings and operation.

Action Commencement and Completion Dates

	Commencement Dates [mm/dd/yr]	Completion Dates [mm/dd/yr]
Measure A	01/05/2012	01/11/2012

Stipulated penalty determination statement

Pursuant to Paragraph 94 of the Consent Decree, stipulated penalties do not apply to Hydrocarbon Flaring Incidents.

APPENDIX B

Hydrocarbon Flaring Incident RCFA

LC-HC-02-2012-051812

CITGO Petroleum Corporation
Lake Charles Refinery
Hydrocarbon Flaring Incident Report – 05/18/12
RCFA Completed 06/22/12

Incident Number: LC-HC-2-2012-051812:

Brief Description of Incident

On May 18, 2012 at approximately 1:30 am, the Unicracker unit feed pump, JP-3, was shut down by operators due to excessive vibration. The sudden, significant change in unit feed rate caused an upset in the unit reactors which necessitated the activation of the emergency dump valve. The depressuring of the reactor system to the B-12 flare resulted in a hydrocarbon flaring incident.

This Report covers hydrocarbon flaring that occurred as a result of the reactor depressuring.

B-12 Flaring

Incident Start Date:	05/18/12	**Incident Start Time:**	01:59 hrs
Incident End Date:	05/18/12	**Incident End Time:**	03:05 hrs

Total Estimated SO_2 Emissions: 0.29 tons	**Total Estimated SO_2 Emissions AVG:** 527.2 lbs/hr

Calculations per Paragraph 92 for the B-8 Flare

Tons of SO_2 Emitted = [FR][TD][ConcH_2S][8.44×10^{-5}]

= [779,922 SCFH] [1.1 hours] [0.004] [8.44×10^{-5}] = 0.29 tons

Rate of SO_2 emissions in lbs/hr = [FR][ConcH_2S][0.169]

= [779,922 SCFH] [0.004] [0.169] = 527.2 lbs of SO_2/hour

The quantity of gas sent to the flare due to emergency depressuring was estimated using system volume, temperature and pressure data. The ensuing hydrogen flare flow was measured using the B-12 flare flow meter. H2S concentrations in the material flared from depressure venting and hydrogen flaring were obtained from laboratory analysis.

Steps taken to limit the duration and/or quantity of sulfur dioxide emissions

The reactor depressuring (100 pound dump) was manually initiated by operators to avoid the possibility of a larger emergency dump (300 pound dump) being initiated automatically. Operations reset and closed the dump valve (ceased depressuring) as soon as the reactor was cooled.

CITGO Petroleum Corporation
Lake Charles Refinery
Hydrocarbon Flaring Incident Report – 05/18/12
RCFA Completed 06/22/12

Root Cause and significant contributing cause(s)

The wire providing power to the 320FV005A trip solenoid burnt in two and caused it to fail close. The output on 320FC005 was at 33% when 320FV005A tripped which means that 320FV005B was already closed. This caused the JP-3 feed pump to be dead headed. This then caused the low flow trip for the 320FV005B to activate before the output got above 50% (which would have opened 320FV005B).

Upon examining the wire, it was found that the wire was previously damaged about one inch from a splice. It had tape over the splice and about 3 inches away from the splice in the direction of the burnt area. It could not be determined when this damage may have occurred. There was also a conduit tee that was found without a cover.

The conclusion is that the pre-existing damage to the wire was the primary cause of the failure with mechanical stress, electrical heating, and corrosion being contributing factors.

Measures to prevent a recurrence of a similar event and proposed corrective actions:

Action Items

(A) Replaced burnt wire, junction boxes, junction box drains, and installed a new cover on the conduit tee.

(B) Emphasize to I & E craftsmen best practice on installing wire that is damaged or has missing insulation.

Action Commencement and Completion Dates

	Commencement Dates [mm/dd/yr]	Completion Dates [mm/dd/yr]
Measure A	05/18/2012	05/18/2012
Measure B	06/21/2012	08/31/2012

Stipulated penalty determination statement

Pursuant to Paragraph 94 of the Consent Decree, stipulated penalties do not apply to Hydrocarbon Flaring Incidents.

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ATTACHMENT 8

Benzene Waste NESHAPs Quarterly BQ Report

Paragraph 109 requires the Lake Charles Refinery, which is subject to the 6 BQ Compliance Option, to calculate a quarterly uncontrolled benzene quantity and estimate a projected calendar year uncontrolled benzene quantity based on the quarterly EOL sampling results, non-EOL sampling results (i.e., POGs), and the approved flow calculations.

The Lake Charles Refinery shall submit the uncontrolled benzene quantity in the progress reports due under Section IX of this Decree.

Based on the attached quarterly EOL/POG sampling results, the Lake Charles Refinery reports the following quarterly and calendar year-end uncontrolled benzene quantity (BQ):

Quarterly Period	Actual 1Q BQ	Projected 2Q BQ	Mid-Year Projected BQ	Projected 3Q BQ	Projected 4Q BQ	Projected Calendar Year BQ
1Q 2012	1.00	0.6	1.60	0.6	0.6	2.8

Quarterly Period	Actual 1Q BQ	Actual 2Q BQ	Mid-Year Actual BQ	Projected 3Q BQ	Projected 4Q BQ	Projected Calendar Year BQ
2Q 2012	1.00	0.43	1.43	0.6	0.6	2.63

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1st Quarter 2012

Sample Type	Sample ID	Equipment Description	Percent Aqueous	Percent Organic	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Hydrocarbon Density (lbs/ft^3)	Total Benzene in Waste (ppmw)	Flow (gpm)	Quarterly Benzene Qty < 1.5 Mg (Mg/qtr)
EOL	424-42	Laboratory Sump	98	2	2.800	2800.000	50.5	2.8	7.000	0.16494691
EOL	432-38	Inlet to Panama Canal Lift Station	99.98	0.02	0.119	1200.000	55.0	0.12	2500.000	0.45665141
EOL	432-43	Slop Oil Handling Contractor	99.9	0.1	4.100	74.000	58.2	4.2	28.800	0.05876268
EOL	3562-040	Pecan Grove tank water draw skids	99	1	6.000	0.001	58.2	5.9	20.4	0.05936276
POG	359-41	E301A Stripper	100	0	0.001	0.000		0.0	334.9	0.00008203
POG	359-40	E301B Stripper	100	0	0.001	0.000		0.0	373.7	0.00009153
POG	359-39	E301C Stripper	100	0	0.006	0.000		0.0	342.6	0.00100691
POG	325-44	Coker 1 - F101 A/B and F201 A/B	100	0	0.005	0.000		0.0	423.2	0.00100203
POG	326-45	Coker 2 - F201 A/B and F202 A/B	100	0	0.004	0.000		0.0	895.8	0.00156513
		K19 Dresser Coupling Leak 2/3/2012								0.254
									Total:	**0.997**

Legend:

NOP - No Organic Phase

EOL - End of Line Sample Point

POG - Point of Generation Sample Point

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2nd Quarter 2012

Sample Type	Sample ID	Equipment Description	Percent Aqueous	Percent Organic	Benzene Aqueous (mg/L)	Benzene Organic (mg/kg)	Hydrocarbon Density (lbs/ft^3)	Total Benzene in Waste (ppmw)	Flow (gpm)	Quarterly Benzene Qty < 1.5 Mg (Mg/qtr)
EOL	424-42	Laboratory Sump	98	2	2.800	734.767	50.5	2.8	7.000	0.05022531
EOL	432-38	Inlet to Panama Canal Lift Station	99.98	0.02	0.016	1200.000	55.0	0.02	2500.000	0.33113689
EOL	432-43	Slop Oil Handling Contractor	99.9	0.1	0.900	2.834	58.2	0.9	28.800	0.01272252
EOL	3562-040	Pecan Grove tank water draw skids	99	0	3.067	0.001	58.2	3.1	20.4	0.03034092
POG	359-41	E301A Stripper	100	0	0.001	0.000		0.0	284.2	0.00006961
POG	359-40	E301B Stripper	100	0	0.001	0.000		0.0	317.7	0.00007782
POG	359-39	E301C Stripper	100	0	0.001	0.000		0.0	406.2	0.00018575
POG	325-44	Coker 1 - F101 A/B and F201 A/B	100	0	0.001	0.000		0.0	496.9	0.00012171
POG	326-45	Coker 2 - F201 A/B and F202 A/B	100	0	0.004	0.000		0.0	591.9	0.00126613
									Total:	0.426

Legend:
NOP - No Organic Phase
EOL - End of Line Sample Point
POG - Point of Generation Sample Point

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ATTACHMENT 9

BWON Training Measures Taken During Reporting Period

Paragraph 112b requires a description of the measures taken during the six month reporting period to comply with the BWON training provisions of Paragraph 105. The Lake Charles Refinery's measures are shown below after each requirement statement.

For the Lake Charles Refinery (Refinery), Paragraph 105 requires the following for the reporting period:

Training.

a. By no later than May 31, 2005, CITGO shall develop and begin implementation of annual (i.e., once each calendar year) training for all employees who draw benzene waste samples for Benzene Waste NESHAP purposes.

   Prior to May 31, 2005, the Lake Charles Refinery developed a Minimum Requirements Job Skills Training Guide for the Benzene NESHAPS sample collection. All employees who draw water samples for Benzene NESHAPS purposes are required to complete the training outlined in this guide. All employees who collected samples in the fourth quarter, 2005 met all of the training requirements defined in the guide.

   Currently, sampling is being performed by an on-site contractor - see Paragraph c. below. CITGO employees are currently not collecting benzene waste samples. Should CITGO employees collect such samples, they will be required to meet the training requirements.

   At LCMC, annual training must be completed before the end of the year unless initial training has been completed that year. Training records for contract employees are retained by the contractor and / or the BWON Coordinator.

b. For the Lake Charles Refinery, by no later than September 30, 2005, CITGO shall complete the development of standard operating procedures for all control devices and treatment processes used to comply with the Benzene Waste NESHAP. By no later than December 31, 2005, CITGO shall complete an initial training program regarding these procedures for all operators assigned to applicable control devices and treatment processes. Comparable training shall also be

provided to any persons who subsequently become operators, prior to their assumption of this duty. "Refresher" training in these procedures shall be performed on a three year cycle.

The Lake Charles Refinery developed standard operating procedures for all Benzene NESHAPS control devices and treatment processes prior to September 30, 2005. These SOPs are retained in the Refinery's electronic data management system.

The Refinery completed training for all Operators at the Refinery prior to December 31, 2005. This training utilized a computer based training (CBT) course and was consistent with the standard operating procedures. Extensive training is conducted for all new Operators at the Refinery prior to assumption of their operator duty. This Benzene NESHAPS CBT course is an element in the training package for new Operators. The Refinery has also an annual training requirement for the BWON CBT course.

At LCMC, annual training must be completed before the end of the year unless initial training has been completed that year. All new Operators must complete this training prior to performing their job duties. If annual training is not completed before end of year, employees are not allowed to enter the plant to perform their assigned job duties.

c. CITGO shall assure that the employees of any contractors hired to perform any of the requirements of Section V.L of this Consent Decree are properly trained to implement such requirements that they are hired to perform, as under Paragraph 105.a-b. [Note: Paragraph 105.c. is not applicable to the Lake Charles Refinery.]

For 105a: By no later than May 31, 2005, CITGO shall develop and begin implementation of annual (i.e., once each calendar year) training for all "contractors" who draw benzene waste samples for Benzene Waste NESHAP purposes.

Prior to May 31, 2005, the Lake Charles Refinery developed and implemented a Minimum Requirements Job Skills Training Guide for the Benzene NESHAPS sample collection. All "contractors" who draw water samples for Benzene NESHAPS purposes are required to complete the training defined in this guide.

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All employees who collect Benzene Waste samples are required to meet all the training requirements. Training records are retained by the contractor and / or the Refinery's BWON Coordinator.

For 105b: For the Lake Charles Refinery, by no later than September 30, 2005, CITGO shall complete the development of standard operating procedures for all control devices and treatment processes used to comply with the Benzene Waste NESHAP. By no later than December 31, 2005, CITGO shall complete an initial training program regarding these procedures for all "contractors" assigned to applicable control devices and treatment processes. Comparable training shall also be provided to any persons who subsequently become "contract operators", prior to their assumption of this duty. "Refresher" training in these procedures shall be performed on a three year cycle.

In conjunction with the standard operating procedures, Job Skill Training Guides were developed for inspection and monitoring tasks associated with Benzene NESHAPS control devices and treatment processes. All contractors hired to perform inspection or monitoring tasks associated with the Benzene control devices must undertake training consistent with these Job Skills Training Guides. All contractor employees hired to perform these tasks completed training prior to December 31, 2005. In addition, all new contractor employees must complete training consistent with the training guides prior to assumption of their job duties. Annual training and requalification of the contractor employees is required.

All contractors who performed inspection and monitoring tasks associated with Benzene NESHAP control devices and treatment processes must complete all required training.

Note: At the Refinery, the LDAR contractor is performing most inspection tasks and monitoring tasks (where Method 21 is being used). A separate contractor is employed to monitor and inspect the carbon canisters.

Training records are retained by each contractor and / or the Refinery's BWON Coordinator.

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ATTACHMENT 10

Chronic Leakers

Consent Decree Requirements

In summary, Paragraph 129 states that:

CITGO shall replace, repack, or perform similarly effective repairs on chronically leaking, non-control valves during the next process unit turnaround after identification. A component shall be classified as a "chronic leaker" under this Paragraph if it leaks above 10,000 ppm twice in any consecutive four quarters, unless the component has not leaked in the twelve (12) consecutive quarters prior to the relevant process unit turnaround.

CITGO's Understanding of this Requirement

CITGO's Consent Decree was entered on January 26, 2005 (Date of Entry). The CD is not retroactive and there is nothing in Paragraph 129 that suggests that leak rates before the entry date must be taken into account. (For example, Paragraph 129 defines "chronic leakers" as any component that "leaks" above . . , not any component that "leaked".) Additionally, there is no effective date for Paragraph 129 stated in the Consent Decree.

Therefore, CITGO has interpreted that Paragraph 129 became effective as of the Date of Entry. [Note: This is a correction to our earlier semi-annual documentation regarding effective or "due" dates as shown in the Semi-Annual Summary Table.]

For a component to be a "chronic leaker", it must leak (or have leaked) twice in any four consecutive quarters after January 26, 2005. Accordingly, the facility could not have identified chronic leakers until the first quarter of 2006.

The CITGO Lake Charles Refinery began performing repairs of "chronic leakers" during all turnarounds scheduled after February 28, 2006 based on an interpretation that Paragraphs 119, 120, and 128 established the start date for repair obligations under the NSR CD.

CITGO's Plan to Achieve Compliance

CITGO completed development of a "chronic leaker" tracking system in November of 2005 in advance of this requirement date. CITGO has maintained compliance with this requirement and began reporting on that compliance in the January 1 thru June 30, 2006 Semi-Annual Report. Any exceptions have been noted in this reporting.

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ATTACHMENT 11

LDAR Monitoring Report Summary

The Lake Charles Refinery LDAR monitoring program is currently consolidated and reported under two different regulatory programs, Louisiana MACT (LA MACT) and Hazardous Organic NESHAP (HON). (1)

Pursuant to Paragraph 130.b. of the Consent Decree, the information requested in Subparagraphs 130.b.i. through 130.b.vi. are being reported by reference as follows:

Regulation	**Hazardous Organic NESHAP (HON)**	**Louisiana MACT (LA MACT)**
Semi-Annual Report Sent to:	U.S. EPA Region VI Regional Administrator Dated: July 30, 2012	LDEQ Office of Environmental Assessment Dated: July 30, 2012
Semi-Annual Report Copied to:	LDEQ Office of Environmental Assessment and U.S. EPA Region VI Chief, Air Enforcement Branch	

Subparagraph 130.b.vii. became effective on February 28, 2006. This attachment contains an explanation of CITGO's understanding of this requirement and a status report table.

(1) On August 3, 2005, the Lake Charles Refinery (Refinery) received approval from the Louisiana Department of Environmental Quality (LDEQ) for the consolidation of Louisiana 2122 into LA MACT. In anticipation of this consolidation, the Refinery initiated LDAR monitoring in compliance with the consolidation on July 1, 2005. On August 30, 2006, the Lake Charles Refinery submitted an update to this program to the LDEQ. The LDEQ gave verbal approval for the inclusion of the updates into the Refinery's Consolidated Fugitive Emission Program.

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New LDAR Reporting Requirements

Beginning February 28, 2006

The Lake Charles Refinery is required to submit in its Semi-Annual Progress Report pursuant to Section IX the following information on LDAR Monitoring:

Delay of Repair Information [Paragraph 130(b)(vii)]

A list of all equipment currently on the "delay of repair" list, the date each component was determined to be leaking at a rate greater than 10,000 ppm, the date of each drill and tap or equivalent method of repair, its associated monitoring results, and whether such activities were completed in a timely manner under Paragraph 128.

The Lake Charles Refinery interprets this requirement to mean the following:

1. Provide a list of all equipment (i.e., pumps and valves (other than pressure relief devices[1]) placed on the "delay of repair" list after February 28, 2006 and the date each component was determined to be leaking.
2. For this listed equipment, provide the initial leak rate.
3. For listed valves, provide the type of repair attempted (i.e., tightening packing, drill and tap or other equivalent method) and the date of that repair attempt.
4. For listed valves, provide the leak rate after the valve repair attempt was made.
5. For drill and taps used on valves leaking at a rate of 10,000 ppm or greater, identify whether or not more than one drill and tap was used within 30 days. (see requirement in Paragraph (128.(c))
6. For each listed piece of equipment, identify whether or not the sign-offs by unit supervisors were obtained within 30 days of identifying the piece of equipment as a leaker. (see requirement in Paragraph (128.(a)).
7. For each listed piece of equipment, identify whether or not the equipment was monitored as required in Paragraph 121. (see requirement in Paragraph (128.(b))
8. For listed pumps leaking at a rate of 2000 ppm or greater, indicate if best efforts were used to isolate and repair. (see requirement in Paragraph (128.(d))

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(1) Pressure relief devices (i.e., pressure relief valves) are excluded based on wording in Paragraphs 119.a., 120.b., 121.b, and 128.c.

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ATTACHMENT 12

Delay of Repair Summary

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Delay of Repair Summary

Process Unit	Component Tag #	Component Type	Component Location	Leak Discovery Date	Leak Rate PPMV	Repair Attempt Date	Repair Method	Follow up Monitoring	Leak Rate PPMV	DOR Start Date	Actual Repair Date	Unit Supervisor Sign-Off within 30 Days	LDAR Monitoring Continued While On DOR?	Were Best Efforts Made to Repair Pumps?
305-SRFU	305-VOC-0017K	VALVE	G2;GRND PR E RD8;30' NW F11; 8" NAP LN; S CKV	7/26/2010	561	7/27/2010	Clean & Tighten	7/27/2010	2796	8/10/2010		Yes	Yes	N / A
						8/9/2010	Clean & Tighten	8/9/2010	1191					
								9/2/2010	28					
								10/5/2010	20					
								11/3/2010	12					
								12/2/2010	4					
								1/11/2011	6					
								2/6/2011	7					
								3/28/2011	4					
								4/28/2011	0					
								5/5/2011	3					
								6/29/2011	4					
								7/8/2011	22					
								8/11/2011	2					
								9/22/2011	58					
								10/13/2011	1					
								11/29/2011	7					
								12/28/2011	2					
								1/30/2012	9					
								2/28/2012	10					
								3/15/2012	9					
								4/23/2012	22					
								5/24/2012	93					
								6/27/2012	12					
305-SRFU	305-VOC-0436	VALVE	G4;UNDER K20 PLAT;15'S C13A;CL FV 318;CV	1/6/2010	58000	1/11/2010	Cleaned	1/11/2010	1006	01/21/10		Yes	Yes	N / A
						1/12/2010	Clean & Tighten	1/12/2010	10893					
						1/19/2010	Clean & Tighten	1/19/2010	49995					
								2/27/2010	42600					
								3/23/2010	42300					
								4/6/2010	198100					
								5/20/2010	21900					
								6/18/2010	500000					
								7/8/2010	48800					
								8/3/2010	17800					
								9/2/2010	109000					
								10/5/2010	500000					
								11/3/2010	21800					
								12/2/2010	192600					
								1/11/2011	45800					
								2/6/2011	827					
								3/28/2011	75900					
								4/28/2011	46498					
								5/5/2011	500000					
								6/29/2011	9138					
								7/8/2011	11399					
								8/11/2011	3402					
								9/22/2011	75300					
								10/13/2011	29400					
								11/29/2011	35400					
								12/28/2011	3300					
								1/30/2012	1699					
								2/28/2012	22300					
								3/15/2012	43000					
								4/23/2012	7188					
								5/24/2012	12600					
								6/27/2012	19800					
305-SRFU	305-VOC-0834	VALVE	G4;W/S K2;20'SW JP-7;CL FV-357;UPST BTM PSI BLK	4/28/2009	16200	4/29/2009	Clean & Tighten	4/29/2009	9487	5/13/2009		Yes	Yes	N / A
						5/13/2009	Clean	5/13/2009	25995					
								6/9/2009	4					
								7/8/2009	9					
								8/28/2009	5					
								9/18/2009	8					
								10/15/2009	10					
								11/20/2009	2					
								12/20/2009	18					

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								1/12/2010	12					
								1/21/2010	3					
								2/27/2010	5					
								3/23/2010	5					
								4/7/2010	5					
								5/20/2010	10					
								6/18/2010	13					
								7/8/2010	18					
								8/3/2010	23					
								9/2/2010	35					
								10/5/2010	21					
								11/3/2010	55					
								12/2/2010	32					
								1/11/2011	114					
								2/8/2011	8					
								3/28/2011	64					
								4/28/2011	1					
								5/5/2011	3					
								6/29/2011	114					
								7/8/2011	5					
								8/11/2011	120					
								9/22/2011	208					
								10/13/2011	1					
								11/29/2011	36					
								12/28/2011	3					
								1/30/2012	12					
								2/28/2012	12					
								3/15/2012	11					
								4/23/2012	26					
								5/24/2012	4					
								6/27/2012	27					
305-SRFU	305-VOC-0962	VALVE	L2/5;S/S E2;10"BLK	5/28/2008	1614	5/29/2008	Tighten Flange	5/29/2008	1084	6/12/2008		No	Yes	N / A
								6/25/2008	162					
								7/11/2008	55					
								8/8/2008	7					
								9/29/2008	709					
								10/3/2008	15					
								11/25/2008	82					
								12/11/2008	41					
								1/30/2009	315					
								2/12/2009	69					
								3/31/2009	2					
								4/29/2009	118					
								5/19/2009	133					
								6/9/2009	217					
								7/8/2009	5					
								8/28/2009	51					
								9/18/2009	114					
								10/15/2009	478					
								11/20/2009	746					
								12/20/2009	765					
								1/21/2010	58					
								2/27/2010	248					
								3/23/2010	510					
								4/7/2010	237					
								5/20/2010	150					
								6/18/2010	563					
								7/8/2010	750					
								8/3/2010	557					
								9/2/2010	720					
								10/5/2010	248					
								11/4/2010	235					
								12/2/2010	736					
								1/11/2011	629					
								2/6/2011	451					
								3/28/2011	365					

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								4/28/2011	461					
								5/5/2011	606					
								6/30/2011	623					
								7/29/2011	433					
								8/11/2011	417					
								9/22/2011	874					
								10/13/2011	1134					
								12/28/2011	932					
								1/30/2012	1004					
								2/28/2012	3461					
								3/22/2012	1199					
								4/23/2012	2596					
								5/24/2012	658					
								6/27/2012	577					
305-SRFU	305-VOC-1029	VALVE	G4.5;15'E E2;JP-4A;DISC/S;CKV	5/28/2008	4275	5/29/2008	Tighten Flange	5/29/2008	2071	6/12/2008		No	Yes	N / A
								7/11/2008	1216					
								9/29/2008	677					
								11/25/2008	1411					
								12/12/2008	0					
								1/30/2009	62					
								2/12/2009	0					
								3/31/2009	2					
								4/28/2009	134					
								5/19/2009	991					
								6/9/2009	661					
								7/8/2009	10					
								8/28/2009	31					
								9/18/2009	39					
								10/15/2009	145					
								11/20/2009	628					
								12/20/2009	725					
								1/21/2010	43					
								2/27/2010	670					
								3/23/2010	866					
								4/7/2010	674					
								5/20/2010	1108					
								6/18/2010	1307					
								7/8/2010	665					
								8/3/2010	816					
								9/7/2010	1454					
								10/5/2010	260					
								11/3/2010	265					
								12/2/2010	18					
								1/11/2011	7					
								2/6/2011	10					
								3/28/2011	4					
								4/28/2011	1					
								5/5/2011	2					
								6/29/2011	13					
								7/8/2011	4					
								8/11/2011	16					
								9/22/2011	73					
								10/13/2011	112					
								11/29/2011	11					
								12/28/2011	4					
								1/30/2012	16					
								2/28/2012	440					
								3/22/2012	14					
								4/23/2012	22					
								5/24/2012	1					
								6/27/2012	10					

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307-C-Topper	307-VOC-0819	VALVE	L10/3;E OF K-2;E-1;TOP OF 28'LN;INJ BLK	11/6/2009	83100	11/7/2009	Clean & Tighten	11/7/2009	22298	11/21/2009		No	Yes	N / A
						11/20/2009	Clean & Tighten	11/20/2009	32997					
								2/27/2010	500000					
								3/23/2010	500000					
								4/24/2010	500000					
								5/20/2010	42000					
								6/18/2010	50000					
								7/8/2010	23100					
								8/3/2010	15100					
								9/7/2010	34821					
								10/5/2010	17500					
								11/4/2010	41300					
								12/2/2010	48600					
								1/11/2011	24700					
								2/6/2011	1652					
								3/28/2011	103500					
								4/28/2011	22798					
								5/5/2011	53600					
								6/30/2011	10300					
								7/29/2011	25400					
								8/11/2011	8322					
								9/22/2011	23800					
								10/13/2011	16400					
								11/29/2011	1935					
								12/28/2011	3074					
								1/30/2012	4517					
								2/28/2012	7192					
								3/22/2012	9593					
								4/19/2012	5458					
								5/24/2012	5360					
								6/26/2012	11399					
308-VACUUM	308-VOC-0139	VALVE	G-1;NE DITCH;E F-9 IN DITCH EIV-15 BLK	10/7/2010	5904	10/8/2010	Clean & Tighten	10/8/2010	1022	10/22/2010		Yes	Yes	N / A
								12/2/2010	179					
								1/11/2011	1606					
								2/8/2011	883					
								3/29/2011	1090					
								4/28/2011	2263					
								5/26/2011	1519					
								6/30/2011	1498					
								7/8/2011	555					
								8/24/2011	578					
								9/22/2011	1096					
								10/13/2011	965					
								11/29/2011	15					
								12/22/2011	139					
								1/30/2012	113					
								2/28/2012	416					
								3/21/2012	229					
								4/23/2012	359					
								5/24/2012	149					
								6/26/2012	1823					
309-Feed Prep	309-VOC-0226	VALVE	L2/7.5;NE/S UNIT;NE/S B-101;OH;S BLD-E OFF 6'INS	2/22/2011	763	2/23/2011	Clean & Tighten	2/23/2011	1497	3/9/2011		Yes	Yes	N / A
						2/24/2011	Clean & Tighten	2/24/2011	804					
								3/31/2011	2					
								4/28/2011	6					
								5/26/2011	7899					
								6/30/2011	14800					
								7/8/2011	2925					
								8/24/2011	304					
								9/22/2011	460					
								10/13/2011	203					

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								11/29/2011	1554					
								12/22/2011	2437					
								1/30/2012	812					
								2/28/2012	3742					
								3/22/2012	779					
								4/23/2012	572					
								5/24/2012	853					
								6/27/2012	1132					
309-Feed Prep	309-VOC-0321	VALVE	D3.5/1;S B-101;NE/S OF FINFAN C-113D;TOPDECK BTM B	5/17/2011	703	5/19/2011	Clean & Tighten	5/19/2011	1105	6/1/2011		Yes	Yes	N / A
						5/23/2011	Clean & Tighten	5/24/2011	952					
						6/1/2011	Tighten	6/1/2011	1350					
								7/29/2011	2510					
								8/29/2011	7278					
								9/22/2011	1341					
								10/13/2011	669					
								11/29/2011	121					
								12/22/2011	94					
								1/23/2012	105					
								2/28/2012	260					
								3/22/2012	233					
								4/23/2012	142					
								5/24/2012	39					
								6/27/2012	49					
309-Feed Prep	309-VOC-0335	VALVE	D3.5/4.5;S B-101;N/S FINFAN C-113C;TOP DK;TOPIN	5/17/2011	5064	5/19/2011	Clean & Tighten	5/19/2011	20394	6/1/2011		Yes	Yes	N / A
						5/23/2011	Clean & Tighten	5/24/2011	2035					
						6/1/2011	Tighten	6/1/2011	4901					
								7/29/2011	2443					
								8/24/2011	2223					
								9/22/2011	2469					
								10/13/2011	4245					
								11/29/2011	21					
								12/22/2011	13					
								1/23/2012	294					
								2/28/2012	1173					
								3/22/2012	1132					
								4/23/2012	2382					
								5/24/2012	3266					
								6/27/2012	3287					
309-Feed Prep	309-VOC-0337	VALVE	D3.5/1;S B-101;N/S FINFAN C-113C;TOP DK;BTM BLK	5/17/2011	971	5/19/2011	Clean & Tighten	5/19/2011	13394	6/1/2011		Yes	Yes	N / A
						5/23/2011	Clean & Tighten	5/24/2011	5696					
						6/1/2011	Tighten	6/1/2011	7499					
								7/29/2011	2341					
								8/24/2011	1843					
								9/22/2011	3707					
								10/13/2011	1038					
								11/29/2011	293					
								12/22/2011	120					
								1/23/2012	1348					
								2/28/2012	3723					
								3/22/2012	1034					
								4/23/2012	1219					
								5/24/2012	1728					
								6/27/2012	2539					

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309-Feed Prep	309-VOC-0537	VALVE	L1/6.5;SE/S UNIT;E-101;E/S;BTM SG;TOP BLK	5/16/2011	1219	5/17/2011	Clean & Tighten	5/17/2011	896	5/31/2011		Yes	Yes	N / A
						5/18/2011	Clean & Tighten	5/18/2011	1217					
						5/23/2011	Clean & Tighten	5/24/2011	798					
								6/30/2011	685					
								7/29/2011	687					
								8/29/2011	1135					
								9/22/2011	1809					
								10/13/2011	784					
								11/29/2011	48					
								12/22/2011	36					
								1/30/2012	21					
								2/28/2012	87					
								3/22/2012	13					
								4/23/2012	29					
								5/24/2012	2					
								6/27/2012	14					
309-Feed Prep	309-VOC-0618	VALVE	G.5;N E-101;BTWN C-104B&A;W/S SHELL/S;BTM BLK TO	7/25/2010	1264	7/26/2010	Clean & Tighten Packing	7/26/2010	797	8/9/2010		Yes	Yes	N / A
						7/27/2010	Tighten	7/27/2010	885					
						8/9/2010	Tighten	8/9/2010	3460					
								9/7/2010	6432					
								10/5/2010	2995					
								11/3/2010	7					
								12/2/2010	2297					
								1/11/2011	1568					
								2/8/2011	2488					
								3/29/2011	1623					
								4/28/2011	1063					
								5/26/2011	1619					
								6/30/2011	2409					
								7/8/2011	1371					
								8/24/2011	1634					
								9/22/2011	1371					
								10/13/2011	1165					
								11/29/2011	1038					
								12/22/2011	3458					
								1/30/2012	2167					
								2/28/2012	3374					
								3/22/2012	2121					
								4/23/2012	1202					
								5/24/2012	2076					
								6/27/2012	1204					
309-Feed Prep	309-VOC-0668	VALVE	G7.5;SW/S OF E-102;CL LV-106;BP BLK	7/25/2010	54700	7/26/2010	Clean & Tighten Packing	7/26/2010	4697	8/9/2010		Yes	Yes	N / A
						7/27/2010	Tighten	7/27/2010	1478					
						8/9/2010	Drill & Tap	8/9/2010	12598					
								9/7/2010	2263					
								10/5/2010	673					
								11/3/2010	13					
								12/2/2010	804					
								1/11/2011	1513					
								2/8/2011	844					
								3/29/2011	1298					
								4/28/2011	1047					
								5/26/2011	1185					
								6/30/2011	842					
								7/8/2011	1990					
								8/24/2011	1264					
								9/22/2011	2005					
								10/13/2011	2628					
								11/29/2011	534					
								12/22/2011	924					
								1/30/2012	1977					
								2/28/2012	2752					

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								3/22/2012	771					
								4/23/2012	691					
								5/24/2012	1694					
								6/27/2012	1314					
309-Feed Prep	309-VOC-0675	VALVE	G16;SE/S E-102;C-103B;TOP NE/S;TUBE/S;OH CHNBLK	10/17/2010	501	10/18/2010	Clean & Tighten	10/18/2010	2915	11/1/2010		Yes	Yes	N / A
								12/2/2010	657					
								1/11/2011	1292					
								2/8/2011	853					
								3/29/2011	1230					
								4/28/2011	1280					
								5/26/2011	696					
								6/30/2011	359					
								7/29/2011	929					
								8/24/2011	794					
								9/22/2011	2545					
								10/13/2011	1942					
								11/29/2011	338					
								12/22/2011	267					
								1/30/2012	40					
								2/28/2012	77					
								3/22/2012	186					
								4/23/2012	147					
								5/24/2012	251					
								6/27/2012	422					
309-Feed Prep	309-VOC-0752	VALVE	L1/2.5;MID E/S UNIT;E-102;W/S;PSV-018;BTMCHNBLK	5/17/2011	3298	5/19/2011	Clean & Tighten	5/19/2011	1780	6/1/2011		Yes	Yes	N / A
						5/23/2011	Clean & Tighten	5/24/2011	1251					
						6/1/2011	Tighten	6/1/2011	4724					
								7/29/2011	499					
								8/24/2011	325					
								9/22/2011	83					
								10/13/2011	111					
								11/29/2011	202					
								12/22/2011	201					
								1/30/2012	97					
								2/28/2012	72					
								3/22/2012	14					
								4/23/2012	29					
								5/24/2012	47					
								6/27/2012	16					
311-Sulfolane	311-VOC-1640	VALVE	L1/6;E JP-248B; W/S E-206; TOP BLK-LT CLMN	12/12/2011	1051	12/13/2011	Clean & Tighten	12/13/2011	3640	12/27/2011		Yes	Yes	N / A
							Replaced				2/6/2012			
311-Sulfolane	311-VOC-3176	PUMP	G2;I2;5'N K19;JP471A	1/13/2012	4500	1/16/2012	Isolated	1/16/2012	10001	1/28/2012		Yes	NA Isolated	Yes
							Replaced Seal				5/10/2012			
313-ALCOH	313-VOC-0420	VALVE	G4 E/S COMP DK 25' SW F108 4" LN W BLK	12/14/2011	1128	12/15/2011	Clean & Tighten	12/15/2011	4363	12/29/2011		Yes	Yes	N / A
							Replaced				2/21/2012			
315-A-Reformer	315-VOC-1456	VALVE	G7;8 E OF SE/S F104;CL FV853;BP BLK	5/23/2011	1399	5/24/2011	Clean & Tighten	5/24/2011	5573	06/07/11		Yes	Yes	N / A
						5/27/2011	Clean & Tighten	5/27/2011	1454					
								6/7/2011	10001					
								9/26/2011	841					
								10/21/2011	455					
								11/29/2011	13					
								12/22/2011	29					
								1/30/2012	169					
								2/29/2012	118					
								3/15/2012	10					
								4/23/2012	34					
								5/24/2012	1					
								6/27/2012	16					

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315-A-Reformer	315-VOC-1553	VALVE	G2;PR SE C RM;BTW SULF & ALCOH;BLK OFF 6" LN E/V 11	5/23/2011	1229	5/24/2011	Clean & Tighten	5/24/2011	720	06/07/11		Yes	Yes	N / A
						5/27/2011	Clean & Tighten	5/27/2011	1044					
								6/7/2011	10001					
								9/26/2011	160					
								10/21/2011	114					
								11/29/2011	416					
								12/22/2011	193					
								1/30/2012	184					
								2/29/2012	286					
								3/15/2012	86					
								4/23/2012	346					
								5/24/2012	169					
								6/27/2012	127					
319-C-4 Recovery	319-VOC-0088	VALVE	G2; SE/S UNIT; N RD B; E/S OF W CATWLK; N BLK	8/17/2010	83100	8/18/2010	Cleaned & Pumped with Grease	8/18/2010	3140	09/01/10		Yes	Yes	N / A
								9/28/2010	2452					
								10/5/2010	26000					
								11/3/2010	7774					
								12/2/2010	4202					
								1/11/2011	1302					
								2/14/2011	15800					
								3/24/2011	14800					
								4/28/2011	29498					
								5/26/2011	3946					
								6/29/2011	3150					
								7/29/2011	3159					
								8/29/2011	1709					
								9/22/2011	987					
								10/25/2011	3244					
								11/29/2011	7854					
								12/15/2011	2576					
								1/30/2012	1281					
								2/28/2012	1386					
								3/21/2012	4541					
								4/23/2012	4702					
								5/24/2012	1258					
								6/28/2012	1687					
320-UNICRACKER	320-VOC-0867	PUMP	G3;SW/MIDUNIT;NE/S E-103;JP-109;PMP SEAL	4/12/2012	11399	4/16/2012	Cleaned	4/16/2012	6362	04/27/12		Yes	NA Isolated	Yes
						4/27/2012	Isolated	4/27/2012	10001					
320-UNICRACKER	320-VOC-1105	VALVE	L2/7;W/MID UNIT;E-END C-109A SHELL;MID BLD-V	4/25/2011	2057	4/28/2011	Clean & Tighten	4/28/2011	18396	05/10/11		Yes	Yes	N / A
						5/3/2011	Clean & Tighten	5/3/2011	4669					
						5/9/2011	Clean & Tighten	5/9/2011	3807					
								6/30/2011	2611					
								7/28/2011	1045					
								8/29/2011	3528					
								9/22/2011	1					
								10/21/2011	3					
								11/29/2011	21					
								12/15/2011	17					
								Jan 2012	Unit Down					
							Removed from service				02/29/12			
320-UNICRACKER	320-VOC-2398	VALVE	G4;HEATER/S;W/S B-3;FV-080;CV	11/6/2009	1032	11/7/2009	Cleaned & Tightened Flange	11/7/2009	2559	11/21/2009		Yes	Yes	N / A
						11/16/2009	Cleaned & Tightened Flange	11/15/2009	4556					
						11/17/2009	Cleaned & Tightened Flange	11/17/2009	1813					
						11/20/2009	Cleaned & Tightened Flange	11/20/2009	3216					
								12/20/2009	2093					
								1/21/2010	21					
								2/27/2010	2010					
								3/23/2010	2384					
								6/18/2010	1904					
								7/13/2010	1020					
								8/3/2010	1248					
								9/7/2010	1105					

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								10/6/2010	1414					
								12/3/2010	1517					
								1/13/2011	1617					
								2/10/2011	579					
								3/28/2011	2222					
								4/28/2011	4646					
								5/27/2011	9294					
								6/30/2011	1025					
								7/28/2011	1136					
								8/29/2011	588					
								9/22/2011	1439					
								10/21/2011	3685					
								11/29/2011	1249					
								12/15/2011	667					
								Jan 2012	Unit Down					
							Replaced Gasket				2/29/2012			
320-UNICRACKER	320-VOC-3799	VALVE	L1/1; NE/S JC-1C PLAT; N/S INST PNL; PT-045C INST	3/5/2012	2490	3/6/2012	Clean & Tighten	3/6/2012	968	3/20/2012		Yes	N / A	N / A
						3/8/2012	Clean & Tighten	3/9/2012	46696					
						3/15/2012	Clean & Tighten	3/15/2012	1850					
						3/20/2012	Clean & Tighten	3/20/2012	2492					
							Replaced Valve				3/28/2012			
326-Coker-II	326-VOC-1659	VALVE	G6;BLW B202 NW/S;BRNR PASS 4-7;PG BLK	6/12/2012	166100	6/13/2012	Clean & Tighten	6/13/2012	3848	6/27/2012		Yes	NA Isolated	N / A
						6/21/2012	Isolated	6/21/2012	10001					
327-C-Reformer	327-VOC-2002	VALVE	G3.5;JC-504B;BLW NE/S COMP NE/S COMP DECK;N BLK	6/2/2010	10001	6/2/2010	Pumped	6/2/2010	9670	6/17/2010		Yes	Yes	N / A
								7/13/2010	7					
								8/4/2010	11					
								9/28/2010	1367					
								10/5/2010	132					
								11/3/2010	778					
								12/3/2010	2753					
								1/13/2011	1371					
								2/7/2011	1057					
								3/29/2011	783					
								4/28/2011	653					
								5/27/2011	993					
								6/30/2011	527					
								7/29/2011	2131					
								8/29/2011	2741					
								9/22/2011	1832					
								10/21/2011	2143					
								11/29/2011	6912					
								12/22/2011	1374					
								1/30/2012	3537					
								2/28/2012	821					
								3/22/2012	2027					
								4/23/2012	3511					
								5/24/2012	2083					
								6/27/2012	1494					
337-Treating	337-VOC-1888	PUMP	G2.5; JP-164A E OF F-5 PMP SEAL	12/13/2011	10001	12/13/2011	Isolated	12/14/2011	10001	12/28/2011		Yes	NA Isolated	Yes
	(Note: Retagged previous tag 337-VOC-1468)						Replaced Seal				5/16/2012			
343-OMB	343-VOC-1427	PUMP	G2;C2;SE TK37 PMP AREA JP423;PMP SEAL	10/21/2011	10001	10/21/2011	Isolated	10/21/2011	10001	11/5/2011		Yes	NA Isolated	Yes
							Replaced Seal				12/13/2011			
343-OMB	343-VOC-1427	PUMP	G2;C2;SE TK37 PMP AREA JP423;PMP SEAL	5/31/2012	10001	5/31/2012	Isolated	5/31/2012	10001	6/15/2012		Yes	NA Isolated	Yes
							Replaced Seal				6/25/2012			
343-OMB	343-VOC-1428	PUMP	G2;C2;SE TK37 PMP AREA JP423A;PMP SEAL	12/11/2011	10001	12/11/2011	Isolated	12/11/2011	10001	12/26/2011		Yes	NA Isolated	Yes
							Replaced Seal				1/12/2012			

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343-OMB	343-VOC-1428	PUMP	G2;C2;SE TK37 PMP AREA JP423A;PMP SEAL	2/5/2012	10001	2/5/2012	Isolated	2/5/2012	10001	2/20/2012		Yes	NA Isolated	Yes
							Replaced Seal				2/28/2012			
343-OMB	343-VOC-2356	VALVE	G10;E5;PR W RD1;W BLCOH CR H2 TO F2;S CHN BLK	7/13/2011	215500	7/14/2011	Clean & Tighten	7/14/2011	35599	7/28/2011		Yes	Yes	N / A
						7/22/2011	Clean & Tighten	7/22/2011	13499					
								8/29/2011	5					
								9/26/2011	3					
								10/21/2011	5					
								11/30/2011	15					
								12/22/2011	10					
								1/30/2012	9					
								2/24/2012	6					
								3/22/2012	3					
								4/5/2012	3					
								5/24/2012	2					
								6/22/2012	8					
343-OMB	343-VOC-2445	VALVE	G3;E4;PR NE/S ALCOH CL FV595;CV	6/11/2006	14978	6/12/2006	Tighten Packing	6/13/2006	10001	6/26/2006		Yes	Yes	N / A
						6/14/2006	Tighten Packing	6/21/2006	10001					
						6/26/2006	Tighten Packing	6/26/2006	10001					
								7/27/2006	4800					
								8/23/2006	10001					
								9/30/2006	293					
								10/24/2006	807					
								11/2/2006	1610					
								12/21/2006	1895					
								1/26/2007	2900					
								2/2/2007	2600					
								5/30/2007	516					
								6/22/2007	10001					
								7/31/2007	4536					
								8/8/2007	5536					
								9/24/2007	4615					
								12/19/2007	72					
								1/30/2008	672					
								2/26/2008	945					
								3/7/2008	1045					
								3/11/2008	876					
								4/30/2008	2496					
								5/23/2008	916					
								6/13/2008	7440					
								7/11/2008	316					
								8/8/2008	12					
								9/30/2008	2755					
								10/22/2008	18					
								11/25/2008	315					
								12/11/2008	243					
								1/29/2009	536					
								2/13/2009	27					
								3/31/2009	10					
								5/21/2009	77					
								6/10/2009	1250					
								7/9/2009	1178					
								8/28/2009	12					
								8/28/2009	858					
								9/18/2009	832					
								10/15/2009	147					
								11/24/2009	1247					
								12/20/2009	8004					
								1/21/2010	164					
								2/27/2010	1063					
								3/23/2010	1259					
								4/7/2010	75					
								5/13/2010	130					
								6/28/2010	102					
								7/13/2010	111					
								8/4/2010	208					

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								9/7/2010	306					
								10/5/2010	281					
								11/3/2010	6987					
								12/2/2010	2831					
								1/11/2011	959					
								2/8/2011	521					
								3/24/2011	2117					
								4/29/2011	19900					
								5/5/2011	6880					
								6/30/2011	663					
								7/28/2011	720					
								8/29/2011	1693					
								9/22/2011	2072					
								10/21/2011	1413					
								11/30/2011	2544					
								12/22/2011	15700					
								1/30/2012	17900					
								2/28/2012	15000					
								3/15/2012	1233					
								4/24/2012	1285					
								5/24/2012	792					
								6/22/2012	74					
343-OMB	343-VOC-3176	VALVE	G2;F6;K16 JP31 SUCT MAN;N END;34UNIT SLOP;12"BLK	12/10/2007	9248	12/11/2007	Tighten Packing	12/11/2007	9288	12/25/2007		Yes	Yes	N / A
						12/18/2007	Tighten Packing	12/18/2007	3796					
						12/19/2007	Repacked Valve	12/19/2007	2632					
								1/30/2008	1139					
								2/26/2008	706					
								3/7/2008	277					
								4/30/2008	702					
								5/23/2008	1891					
								6/13/2008	8214					
								7/11/2008	2457					
								8/8/2008	1283					
								9/30/2008	269					
								10/22/2008	918					
								11/25/2008	1348					
								12/11/2008	3431					
								1/29/2009	185					
								2/13/2009	638					
								3/31/2009	6					
								5/21/2009	38					
								6/10/2009	11					
								7/9/2009	3					
								8/28/2009	55					
								9/10/2009	170					
								9/18/2009	180					
								10/15/2009	23					
								11/24/2009	68					
								12/20/2009	143					
								1/21/2010	85					
								2/27/2010	27					
								3/23/2010	85					
								4/7/2010	70					
								5/13/2010	995					
								6/28/2010	564					
								7/8/2010	862					
								8/4/2010	645					
								9/7/2010	3544					
								10/5/2010	500000					
								11/3/2010	26					
								12/3/2010	1595					
								1/13/2011	1011					
								2/8/2011	790					
								3/24/2011	1332					
								4/29/2011	917					
								5/5/2011	980					

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								6/30/2011	482					
								7/28/2011	132					
								8/29/2011	380					
								9/26/2011	379					
								10/21/2011	474					
								11/30/2011	119					
								12/22/2011	176					
								1/30/2012	163					
								2/24/2012	87					
								3/22/2012	59					
								4/5/2012	60					
								5/24/2012	50					
								6/22/2012	22					
343-OMB	343-VOC-4833AS	PUMP	G3;H6;20'ST180;JP238;PMP SEAL	10/26/2011	20400	10/31/2011	Cleaned Seal	10/31/2011	5130	11/10/2011		No	NA Isolated	Yes
						11/10/2011	Isolated	11/10/2011	10001					
							Replaced Seal				1/18/2012			
348-K-56	348-VOC-0964	VALVE	L1/0;S/END TOP F-28E;PSI BLK	10/12/2010	14500	10/13/2010	Clean & Tighten	10/13/2010	3296	10/27/2010		Yes	Yes	N / A
						10/25/2010	Fiber wrap	10/25/2010	2260					
						10/25/2010	Fiber wrap	10/25/2010	2856					
						10/26/2010	Fiber wrap	10/26/2010	2872					
						10/27/2010	Fiber wrap	10/27/2010	15194					
								11/16/2010	14600					
								12/2/2010	170600					
								1/13/2011	1602					
								2/8/2011	1270					
								3/24/2011	51400					
								4/7/2011	2679					
								5/27/2011	1987					
								6/30/2011	6501					
								7/28/2011	13500					
								8/25/2011	1918					
								9/26/2011	1213					
								10/21/2011	1986					
								11/29/2011	8904					
								12/22/2011	2070					
								1/30/2012	1157					
								2/28/2012	2436					
								3/19/2012	2847					
								4/23/2012	1675					
								5/24/2012	9100					
								6/26/2012	290200					
353-BOH	353-VOC-0012	VALVE	G9;W/S B-601;PG HDR S/END;1ST BLD-V FROM S	10/20/2011	1933	10/21/2011	Clean & Tighten	10/21/2011	2872	11/4/2011		Yes	Yes	N / A
						11/3/2011	Clean & Tighten	11/4/2011	1502					
								12/22/2011	669					
							Replaced Screw Connectors				1/21/2012			
353-BOH	353-VOC-0044	VALVE	G5.5;W/S;B-601;PG LOOP;BP	10/24/2011	1314	10/25/2011	Clean & Tighten	10/25/2011	17199	11/8/2011		Yes	Yes	N / A
								11/30/2011	1088					
								12/22/2011	2068					
							Replaced Screw Connectors				1/21/2012			
353-BOH	353-VOC-0049	VALVE	G4;W/S;B-601;PG LOOP;N BLK TO BLD	10/24/2011	8874	10/25/2011	Clean & Tighten	10/25/2011	7464	11/8/2011		Yes	Yes	N / A
								11/30/2011	2167					
								12/22/2011	1480					
							Replaced Screw Connectors				1/21/2012			
357-B-Reformer	357-VOC-0702	VALVE	G6;10' S E401;JP405A;DISCH/S;E VERT BLK	11/22/2011	4871	11/23/2011	Clean & tighten	11/23/2011	62900	12/7/2011		Yes	Yes	N / A
								12/28/2011	9					
							Replaced				2/6/2012			
360-PFU	360-VOC-0575	VALVE	D1/3;N/S UNIT;E/S DA302;10" BLK	10/29/2007	1459			11/28/2007	5	12/20/2007		No	Yes	N / A
								12/20/2007	1200					
								2/26/2008	1220					

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								3/19/2008	1026					
								4/25/2008	18					
								5/23/2008	28					
								6/26/2008	1820					
								7/18/2008	32					
								8/8/2008	23					
								9/30/2008	71					
								10/30/2008	56					
								11/26/2008	48					
								12/17/2008	2968					
								1/30/2009	5496					
								2/16/2009	2597					
								2/23/2009	4					
								3/27/2009	7520					
								7/14/2009	1					
								8/28/2009	2362					
								9/18/2009	5347					
								10/15/2009	2119					
								11/30/2009	2215					
								1/20/2010	42					
								2/25/2010	1911					
								3/23/2010	74					
								4/28/2010	95					
								5/26/2010	895					
								6/28/2010	5546					
								7/28/2010	609					
								8/30/2010	910					
								9/20/2010	1013					
								10/20/2010	1507					
								11/29/2010	3056					
								12/20/2010	987					
								1/20/2011	1435					
								2/22/2011	2051					
								3/14/2011	1426					
								4/20/2011	1942					
								5/26/2011	2131					
								6/30/2011	1382					
								7/26/2011	6178					
								8/18/2011	3713					
								9/26/2011	2319					
								10/26/2011	18					
								11/29/2011	1539					
								12/12/2011	4186					
								1/26/2012	465					
								2/13/2012	268					
								3/27/2012	325					
								4/18/2012	511					
								5/29/2012	1201					
								6/27/2012	776					
432-WASTE H2O	432-VOC-0473	VALVE	L1/2;W/S F230;PSV1437;V-REG	6/1/2006	32773	6/2/2006	Tighten Fitting	6/5/2006	10001	6/16/2006		Yes	Yes	N / A
								7/31/2006	10001					
								8/23/2006	6227					
								9/29/2006	0					
								10/23/2006	18					
								11/2/2006	2					
								12/21/2006	2					
								1/26/2007	8					
								2/9/2007	12					
								3/28/2007	0					
								4/5/2007	19					
								5/30/2007	0					
								6/20/2007	50					
								7/31/2007	3					
								8/8/2007	9					
								9/7/2007	5					
								10/26/2007	251					

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								11/21/2007	17					
								12/20/2007	360					
								1/30/2008	1					
								2/8/2008	312					
								3/7/2008	1752					
								4/30/2008	5					
								5/23/2008	41					
								6/13/2008	6					
								7/2/2008	5					
								8/8/2008	27					
								9/6/2008	6					
								9/30/2008	5					
								10/23/2008	41					
								12/11/2008	0					
								1/30/2009	2440					
								2/12/2009	80					
								3/31/2009	3					
								5/19/2009	6					
								6/11/2009	11					
								7/14/2009	12					
								8/28/2009	3					
								9/18/2009	0					
								10/15/2009	11					
								11/24/2009	21					
								12/20/2009	21					
								1/21/2010	20					
								2/25/2010	29					
								3/23/2010	11					
								4/24/2010	7					
								5/13/2010	6					
								6/28/2010	16					
								7/13/2010	7					
								8/4/2010	8					
								9/7/2010	46					
								10/5/2010	11					
								11/3/2010	19					
								12/2/2010	4					
								1/11/2011	1					
								2/14/2011	11					
								3/28/2011	6					
								4/29/2011	3					
								5/27/2011	70					
								6/29/2011	6					
								7/28/2011	30					
								8/29/2011	2					
								9/26/2011	3					
								10/31/2011	932					
								11/30/2011	4					
								12/28/2011	8					
								1/30/2012	16					
								2/29/2012	11					
								3/27/2012	117					
								4/24/2012	15					
								5/30/2012	5					
								6/27/2012	16					
453-Power Utility	453-VOC-0552DC	VALVE	G2; 8' E OF B1; CL FV004; CV	1/18/2012	1659	1/19/2012	Pulled Valve	1/19/2012	10001	2/2/2012		Yes	N / A	N / A
							Rebuilt Valve				2/6/2012			
459-CV-1	459-VOC-0020	PUMP	G3;SE/S UNIT;15' E F136;JP-125B;SEAL	2/21/2012	10001	2/21/2012	Isolated	2/21/2012	10001	3/7/2012		Yes	N / A	N / A
							Replaced Seal				3/14/2012			

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484-ACGH	484-VOC-1545	VALVE	G6;NE/SUNIT;S/SJC101;DRYGAS BRD;GS106A/B;3WAYVLV	8/2/2011	7625	8/3/2011	Clean & Tighten	8/3/2011	1309	8/17/2011		No	Yes	N / A
								9/22/2011	2365					
								10/21/2011	7741					
								11/29/2011	13500					
								12/15/2011	5896					
								1/30/2012	4803					
							Replaced Tubing & Fitting				2/23/2012			
484-ACGH	484-VOC-1551	VALVE	G5;NE/SUNIT;S/SJC101;DRYGAS BRD;PDT 213;BLK	11/4/2009	3226	11/5/2009	Clean & Tighten	11/5/2009	4131	11/19/2009		Yes	Yes	N / A
								12/20/2009	3825					
								1/21/2010	681					
								2/27/2010	889					
								3/23/2010	851					
								4/24/2010	2205					
								5/4/2010	3145					
								6/28/2010	644					
								7/8/2010	710					
								8/4/2010	995					
								9/9/2010	1151					
								10/5/2010	911					
								11/3/2010	2450					
								12/2/2010	2178					
								1/11/2011	6002					
								2/6/2011	6984					
								3/29/2011	2884					
								4/29/2011	1198					
								5/31/2011	2764					
								6/30/2011	1325					
								7/28/2011	39					
								8/29/2011	3870					
								9/22/2011	4671					
								10/21/2011	8352					
								11/29/2011	4499					
								12/15/2011	1970					
								1/30/2012	59					
							Replaced Fitting				2/23/2012			
484-ACGH	484-VOC-1628	VALVE	L1/3;E/SUNIT;W/S JC101;BLK TB	5/13/2009	5343	5/14/2009	Clean & Tighten	5/14/2009	6227	5/28/2009		Yes	Yes	N / A
								6/11/2009	698					
								7/9/2009	5224					
								8/28/2009	4					
								9/18/2009	40					
								10/15/2009	47					
								11/30/2009	4069					
								12/20/2009	5316					
								1/21/2010	727					
								2/27/2010	4106					
								3/23/2010	2427					
								4/24/2010	4103					
								5/4/2010	3696					
								6/28/2010	4708					
								7/8/2010	2147					
								8/4/2010	3868					
								9/9/2010	4542					
								10/5/2010	7366					
								11/3/2010	5769					
								12/2/2010	3619					
								1/11/2011	4335					
								2/6/2011	5781					
								3/29/2011	7400					
								4/29/2011	16000					
								5/6/2011	7297					
								6/30/2011	2157					
								7/28/2011	644					
								8/29/2011	5003					
								9/22/2011	7268					
								10/21/2011	4750					

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								11/29/2011	11700					
								12/15/2011	5784					
								1/30/2012	7716					
							Replaced Valve				2/23/2012			
485-BCGH	485-VOC-1583	VALVE	G3;15S JC201;INST PNL;BP BLK	1/10/2011	500000	1/11/2011	Clean & Tighten	1/11/2011	14496	1/25/2011		Yes	Yes	N / A
						1/18/2011	Clean & Tighten	1/18/2011	11296					
								2/28/2011	11200					
								3/29/2011	56400					
								4/29/2011	16800					
								5/6/2011	2028					
								6/30/2011	55800					
								7/28/2011	11616					
								8/29/2011	21200					
								9/22/2011	26400					
								10/21/2011	53500					
								11/29/2011	8500					
								12/15/2011	19200					
								Jan 2012	Unit Down					
							Changed O Ring in body				2/12/2012			
485-BCGH	485-VOC-1584	VALVE	G1;15S JC201;INST PNL;INST PDT 597	9/28/2011	597	9/29/2011	Clean & Tighten	9/29/2011	597	10/13/2011		Yes	Yes	N / A
								10/31/2011	523					
								11/29/2011	3119					
								12/28/2011	1					
								Jan 2012	Unit Down					
							Changed O Ring in body				2/12/2012			
485-BCGH	485-VOC-1590	VALVE	G5,5;15S JC201;INST PNL;BP BLK	1/10/2011	687	1/11/2011	Clean & Tighten	1/11/2011	2562	1/25/2011		Yes	Yes	N / A
						1/18/2011	Clean & Tighten	1/18/2011	2746					
								2/28/2011	3368					
								3/29/2011	1791					
								4/29/2011	2695					
								5/6/2011	1881					
								6/30/2011	731					
								7/28/2011	614					
								8/29/2011	1101					
								9/22/2011	93					
								10/21/2011	114					
								11/29/2011	38500					
								12/15/2011	1161					
								Jan 2012	Unit Down					
							Changed O Ring in body				2/12/2012			
485-BCGH	485-VOC-1603	VALVE	G5,5;5S JC201;N/S INST PNL;BP W BLK-INST	9/28/2011	783	9/29/2011	Clean & Tighten	9/29/2011	1082	10/13/2011		Yes	Yes	N / A
								10/31/2011	796					
								11/29/2011	555					
								12/15/2011	418					
								Jan 2012	Unit Down					
							Changed O Ring in body				2/12/2012			
485-BCGH	485-VOC-1682	VALVE	D1/10;E/S UNIT;S/S JC201;E-BP-BLK	10/11/2011	2088	10/12/2011	Clean & Tighten	10/12/2011	4386	10/26/2011		Yes	Yes	N / A
								11/29/2011	43000					
								12/15/2011	17					
								Jan 2012	Unit Down					
							Welded Fitting to Flange				2/12/2012			

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ATTACHMENT 13

Emission Summary Data

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The following information is being reported pursuant to the requirements in Paragraph 144.b. Quarterly performance as a percentage of operating hours and all exceedences are presented in the body of the report.

Except where noted, emission reductions shown below reflect emissions reductions from the first year prior to consent decree implementation.

Overall Changes

First Half 2012 CD Report

CITGO LCMC CD Reductions (Tons per Year)	NOx	SO2	CO	PM	H2S	Notes
FCCU Units	770	3660	-62	656		Increase in CO - 12 Month ending 6/30/2012 versus 2004
Heaters and Boilers	4415					For SO2, H&B's were subject to Subpart J standards prior to CD - No appreciable changes. NOx reduction based on CD baseline (2001 / 2002 Average) versus 12-Month total ending 6/30/2012.
Flares		639				This represents reduction from the B-16 flare, shutdown of Lube Plant flare, and B-11 / B-12 / B-104 Flare Gas Recovery System reductions.
LDAR Enhancements						No readily quantifiable changes.
BWON						No readily quantifiable changes. Refinery subject to BWON prior to CD
SRU Tail Gas Units						No readily quantifiable changes. Refinery subject to subpart J prior to CD
SRU Pit Vents					32	Represents emissions prior to pit vent controls (2004) versus 12 Month total ending 6/30/2012.
Acid Plant		166				Represents emissions prior to Subpart H standards (2004) versus 12 Month total ending 6/30/2012.
Total Emission Reduction Yearly Snapshot (Tons per Year)	5186	4465	-62	656	32	

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Emission Reductions By Source

FCC Units

Unit	Pollutant	2004 TPY	12-Month Total TPY	Change TPY	Comment
Total FCCU	NOx	876	106	770	12-Month Rolling, thru 6/30/12
	SO2	3665	5	3660	
	CO	178	240	-62	
	PM	762	106	656	

Heaters and Boilers

Emission reductions shown below reflect those sources which have been shutdown or have had qualifying controls installed.

LAKE CHARLES REFINERY		2001 / 2002 Average NOx Emissions, TPY	12-Month Total Thru 6/30/2012 NOx Emissions, TPY	Change -NOx Emissions, TPY	Comment
SEQ No.	Unit ID				
79	0003-446B-1 & B-1A	2477.6	197	2280	
78	0003-446B-1B	1372.6	85	1288	
135	0003-448B-5A	78.9	23	56	
82	0003-448B-3	158.0	48	110	
34	0005-130BF-4	22.5	0.0	23	
31	0005-130BF-1	126.6	0.0	127	
32	0005-130BF-2	132.8	0.0	133	
33	0005-130BF-3	135.5	0.0	135	
14	0005-103BA-1,2A&2B	106.4	0.0	106	
1	0005-100BA-1	35.4	0.0	35	
2	0005-101BA-101	28.3	0.0	28	
19	0005-105BA-1 & 2	11.3	0.0	11	
6	0005-102N-2A	20.3	0.0	20	
7	0005-102N-2B	22.2	0.0	22	
8	0005-102N-2C	21.0	0.0	21	
17	0005-104BA-1 & 2	20.0	0.0	20	
				4415	

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Flares

Appendix G Flare Sources	SO2 Reductions Prior Control Year TPY	12-Month Total Thru 6/30/12 TPY	SO2 Change TPY	Comment
B-11	289	0.33	**288.8**	B-11 became a subpart J affected facility 9-30-2010.
B-12	258	1.11	**257.1**	B-12 became a subpart J affected facility 2-28-2010.
B-16	91.3	0.03	**91.2**	B-16 became a subpart J affected facility 12-31-2008.
B-104	0.3	0.30	**0.0**	B-104 became a subpart J affected facility 12-31-2011.
PFU	na	na	na	no controls necessary - inherently sweet
Lube	1.5	0	**1.5**	shutdown in 2008
		Total	**639**	

SRU Pit Vents & Acid Plant

	2004 TPY	12-Month Total Thru 6/30/2012 TPY	Reduction TPY	
Pit Vents	32	0.2	32	H2S
Acid Plant	239.3	73.1	166	S02

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ATTACHMENT 14

Summary of Additional Matters for EPA and LDEQ Review

Leak Detection and Repair (LDAR) Program

The following additional information is being reported pursuant to the requirements in Paragraph 144.d.:

The Lake Charles Refinery understands that pursuant to CITGO's Consent Decree (in particular, Paragraphs 113 and 115), the Lake Charles Refinery is to be compliant with all applicable Federal and State LDAR requirements as well as the enhancements identified in the CITGO Consent Decree. In addition, CITGO's Consent Decree requires that for a leak determined by Method 21 testing on pumps and valves, CITGO is to make a first attempt to repair and remonitor within 5 days.

During this reporting period, CITGO had no pump or valve found leaking that failed to comply with the 5/15 day repair and recheck requirements.